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INDUSTRIAL ORGANISATION IN INDIA

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" treats both these movements briefly, criti cally and from the stand psint of one who knows intimately the problemsof oopeca rative organisation among Asiatic peasants and contains much that is not elsewhere recorded' —Yearbook of Agricultural operation, 1949 (Horace Plunkett Founda tion, London)

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PREFACE

We admit that there are books in the market which deal with the industries and industrial organisation in India. Yet we feel there is scope for saying something in the way attempted by us here. The book is planned for students of industrial organisation at the pre-University stage but in dealing with the specific industries care has been taken to provide matter in a way to make the chapters definitely useful for the University students also. The industries dealt with are Coal, Iron and steel, Cement, Cotton textiles, Sugar, Paper, Match, Glass and Cottage industries with special reference to U.P.

We are grateful to Dr. Kailash Nath Katju, Governor of Bengal, for kindly writing the foreword. We were influenced by his clarity of thought about and his deep interest in industrial development.

MAHESH CHAND
SRIDHAR MISRA

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I

ECONOMIC EVOLUTION

Present conditions are in many cases the result of the past Therefore, the knowledge and understanding of History—economic, social and political—are important andnecessary for the right study and appreciation of man's present position and status Here we are chiefly concerned with the development of economic life Man has passed through several stages in his development from savagery to civilization There has been a process of economic evolution We cannot strictly draw sharp lines of demarcation between different stages in relation to time But we can distinguish between different stages by the nature of man s wants and his activities which show great diversity from one stage to another Their description is interesting and useful We shall, therefore, first describe the various stages through which the present society has gradually passed These are. (1) the Primitive stage, (2) the Pastoral stage, (3) the Agricultural stage, (4) the Handicraft stage, (5) the Domestic stage, (6) the Industrial stage

1 *The Primitive Stage* —In the beginning man had few wants Hunting and fishing were his main means of livelihood He depended exclusively upon Nature and was always in search of edible fruits and other natural products He wandered from one place to another in such pursuit and had a roving existence The people who depended upon fishing, were less migratory because in a locality fishes were not exhausted

so soon as other natural products. They killed animals and sometimes did not spare even their own specie *viz* man for satisfying their hunger. Animal skins and barks of trees were quite enough to cover their bodies. Caves and dense bushes gave them shelter Thus the primary needs were fulfilled. In that stage they hardly ever thought of any other want of commodity Private property was unknown to them Self sufficiency was their chief characteristic feature. But often they were barbarous and fought cruelly for inhabiting a new area

2. *The Pastoral Stage*.—The stock of animal and even of wild nuts and vegetables which satisfied primitive man's elementary wants was not inexhaustible unless properly reared or looked after This was realised very soon by the people and they began to domesticate their animals instead of killing them They even raised large flocks of animals These animals now gave them meat, milk and wool They also served as means of transport and conveyance Private property had thus its origin As these animals mostly lived on grass, which could be obtained from good pasture lands alone, their masters were always in search of new grazing grounds So they still continued to wander, as in the primitive stage, from place to place Now they were in search of good, green grass lands for their animals, while in the former stage they looked for fresh means of subsistence for themselves Self sufficiency still characterised their pastoral economy There was no exchange Man's dependence upon Nature was a little reduced Population increased and was now less sparse than in the first stage

3. *The Agricultural Stage.* —The experience which was gained while looking after his cattle and land, taught man the uses to which land could be put more profitably Slowly, he took to cultivation or tillage of the soil This helped him to produce more food for himself and fodder for his animals The agricultural pursuit demanded a settled l fe for the cultivators Accordingly, people were now no longer nomad c They lived in close surroundings They were more peaceful and less dependent upon Nature's uncertainties Thus small hamlets and villages grew Each village became a corporate unit 'Self sufficiency' of man was still the dom nat ng principle Each family produced all that it required for the satisfaction of the wants of its members However, exchange of surplus goods subject to coincidence of wants, was not altogether uncommon among neighbours It was on a lim ted scale Thus though man had achieved greater victory over Nature, he still depended upon her for good crops When crops failed due to the fa lure of ra ns or other natural calamities, he resorted to old primitive and pastoral means to satisfy h s wants

4 *The Handicrafts Stage* — Man's ingenuity and experience led him to sp* ial sa* o ı Tn* benefit aris ng from interchange of goods and serv ces were also realised Thus each man b*gan to specializ in the occupation for which he was most capable He was now known after the craft he followed as carpenter, blacksmith, potter or ta lor. They were independent skilled workers He possessed all the requisites of production such as raw materials tools

and implements As there were no machines to work with, the entire work was done with hands either by the producer or under his personal supervision and direction at every stage Hence this is known as the Handicrafts stage The size of the production unit was small and a little capital would do Production was no longer limited to one's own needs People produced goods even to meet *the requirements of their neighbouring districts* The barter system came into existence Sometimes pieces of wood and stone were used as money Later metallic money came to be used The constant intermingling of people and interchange of their ideas widened the scope for exchange Villages and towns increased and developed with the growth of population. Village and Craft gilds, of which modern Association and Monopolies are rather later developments, also sprang up These gilds rendered a great help to their members by protecting their economic interests Besides, they also supervised the work of the craftsmen and gave them advice to improve workmanship, checked dishonest business practices and sometimes even provided relief to the sick, the unemployed and the disabled The accumulation of wealth also became visible

5 *The Domestic Stage*—This stage marked a great development in trade Markets expanded considerably and trade transactions extended even to foreign countries However, production was limited to domestic workshops, as only those who had accumulated money produced goods in large quantities and employed hired labourers. The workers would live in the country and would be

occupied in farming The emergence of 'employers' and 'employees' was a notable feature of this stage The former supplied all facilities of work including the raw materials and tools to the workers, who lost their own identity in production and were recognised as mere wage-earners Skilled workers like village artisans also had no initiative and became dependent of enterprising employers even for their livelihood Middlemen also came into prominence They acted as intermediaries between the producer and the consumer and often arranged to procure raw materials

6 *The Industrial Stage*.—During the domestic stage, the human wants multiplied tremendously and necessitated large production of goods Man's ingenuity led to many inventions and discoveries which accelerated the pace of Industrial Revolution of the factory system Events of far-reaching importance took place The use of 'Machinery' and 'Power' is by far the most important New machines were invented Coal and steam-power came to be used Improvements in the means of communication and transport widened the scope of trade, commerce and industry beyond human imagination. New methods and processes of production as well as distribution began to be invented every day Goods began to be produced on a large scale in big workshops and factories employing thousands of skilled and unskilled labourers The accumulation of capital led to the establishment of joint stock companies where a small board of directors controlled the policy and administration. Middlemen became dominant. The gulf created during the previous stage between the

'worker' and the 'master' became wider and wider with the passage of time Competition also made its appearance Organisation and specialisation became the chief features of industrial production Every increase in population implied extension of markets, which developed from local to national, and then to international limits

The problem of industrial organisation and management became complex and intricate The economic and social condition of labourers in the factory areas required greater attention and caution on the part of entrepreneurs The division of labour became imperative The distributive side, too, had to be carefully looked into With the development of the money economy, banks and insurance companies came into existence They are an important feature of the modern economic development Provision of capital and extension of credit became inevitable under such rapid industrial advancement Location and planning of industries became topics for serious consideration Above all, the maintenance of Industrial Peace through sound relations between 'labour' and 'capital' and the avoidance of uneconomic competition by mutual agreements among industrialists are questions to be solved with tact and fairness

The use of machinery in industry has been the chief feature of the industrial revolution It has greatly revolutionised the nature of production and has also influenced labour In fact, the industrial revolution has mechanised very economic activity The effects of machinery may be summarised into two groups (1) effects on production and marketing and (2) effects on labour

Effects of Machinery on Production and Marketing—

1 The immediate and most important effect of machinery upon production has been the tremendous increase in output. In this connection it is sometimes alleged that there is over-production But this idea is fallacious and absurd Wants are limitless and insatiable and since wants determine demand for a commodity production can never exceed requirements The so called over-production results from lack of producer's foresight in balancing supply and demand It is also caused due to the inability of a large number of consumers to purchase goods even at lower prices This is natural in countries with uneven distribution of wealth

2 Industrial production increases not only the quantity but also the quality of goods Greater refinement and uniformity are evident in articles manufactured with the help of machines Thus production is sufficiently standardised and made more regular

3 Large scale production with the help of machines also reduces the cost per unit There are greater possibilities for effecting internal and external economies, which go to reduce the cost of production Prices also tend to become lower under such conditions The latter stimulates the demand for the product

4 Due to the large scale mechanical production markets, too, have been extended, standardised, and made "perfect" and more regular The exchange business has been facilitated Specialisation in the marketing of goods, too, has been achieved

5 The task of sampling and grading of products has been very much simplified as the goods of a given class do not differ in their design and quality The consumers over distant markets are informed about the quality of goods more exactly and correctly So sales can be arranged in distant markets

Effects of Machinery on Labour—

1 The machine has greatly relieved the labourers from the drudgery and physical strain involved in heavy work The time and energy so saved can be employed for better and more work He can now work more and with less fatigue

2 With the help of machines, workers are able to acquire more efficiency and speed Even unskilled workers have learnt to operate simple machines They do more work and are thus able to earn more than what they could earn otherwise Besides, machine operators are considered more responsible than mere manual labourers They are naturally better paid

3 The use of machine has also increased the mobility of labourers They can now easily migrate from one industry to another or from one factory to another and thus secure a better wage

4 The workers have suffered some losses as well on account of the use of machinery It has dispensed with the services of a large number of craftsmen and other labourers, who have been put to great hardships Artisans and skilled workers have been reduced to mere

machine operators They get no chance to display their talent or workmanship As the major part of the work is done by automatic machines, the worker feels less responsible, for if the work is good, its credit is given to the machine and not to the worker

5 On account of a lack of good organisation of workers, they are exploited by the large scale producers

6 As the capitalists have their influence felt in the Government, even the State succeeds in doing little for the housing medical educational and recreative facilities to the workers

SUMMARY

The chief features of the various stages through which man has passed are summarised in the chart given on the next page

	Primitive Stage	Pastoral Stage	Agricultural Stage
1	Man's dependence upon Nature	Man's dependence on domesticated nimals	Man's dependene on cultivat on
2	Self sufficiency and no exchange	Self sufficiency and no exchange	Self sufficiency with lim - ted exchange
3	No Production	No product on	Agr cultural production
4	Man as collector of Nature's gifts	Man as a herdsman	Man as an independent cultivator
5	No machinery	No machinery	No machinery
6	*Barbarous nature of man*, nomadic life No associations	*Barbarous nature* and nomadic life No associations	*Settled life in small* groups in hamlets
7	No private property	Private property in animals	Extension of private property

Handicrafts Stage	Domestic Stage	Industrial Stage
Man depended directly on his crafts and workmanship	Man depended on the exchange value of his goods	Man's dependence on *machines the result of* his own invention and discovery
Self sufficiency of the town prevalence of barter	Self sufficiency of the country, limited money economy	World economy, extended money economy with possibility of international money
Limited production for immediate consumption	Production for limited markets	Production for world wide makers
Man as an independent artisan	Man divided as employer and 'employee'	Men fighting as 'Capital' and 'Labour'
Crude types of tools and implements	Small and simple tools & implements	Gigantic machines
Rise of craft and village gilds	Associations of merchants & traders	Monopolies, trusts and kartels
Further extension of private property	Accumulation of wealth	Wide spread accumulation of Capital and exploitation of those without it

II

INDIAN VILLAGE ECONOMY

India is a land of villages The majority of our population is rural and largely dependent upon agriculture for its sole occupation Our national economy is very closely connected with the village life and its problems. Even in the study of Industrial Organisation, it is deemed necessary to make a reference to the Indian Village Economy because all industries—large as well as small—derive raw materials from the villages Therefore, before we study the development of industries and business in India, we must acquaint ourselves with the important features of the Indian village and the changes brought about by recent economic developments in the village life

Indian Village Organisation —The Indian villages once had a well balanced social, economic and political system Politically, the Village Republic was the ideal form of democracy The Panchayat managed the internal administration with ease and harmony All had an equal voice and there was no scope for injustice and fraud The people were completely united and displayed a high sense of solidarity and mutual help They lived in houses built at one place Custom and not competition determined all their relations The determinat on of prices and wages rested more on social and moral considerations than on economic factors A money-economy of the present type had not developed and payments were generally made in kind Products such as those of handcrafts were sold in the fairs and markets But production was more for internal use

rather than for the distant markets There was little exchange business between towns and villages They had a self sufficient economy The requirements of the village people were produced locally They had developed a co-operative form of agriculture and industry in which there was no scope for the exploitation of the poor by the rich Agriculture was the chief occupation It was regarded to be the best occupation But other allied industries and crafts were also sufficiently developed Village craftsmen like weavers had won great reputation for the high standard of their workmanship and the artistic designs of their goods Every village had its own priest and barber, potter and smith, shoemaker and oilseedsman, ginner, tailor *and other artisans, agriculturists,* labourers and village servants They were all bound togather on a basis of solidarity, partly because the village was isolated and partly because each person knew that if agriculture, the chief source of livelihood, failed, they would suffer from scarcity and famine

Breakdown of Village Organisation —The 'Self sufficiency' and the old organisation of the Indian villages was broken by the British rule in India Their isolation was removed by the construction of roads and railways which linked the village with distant producers and markets in India and abroad Foreign capital gradually grew with all its evil effects of exploitation The resultant Money-economy replaced custom by competition Power industries caused the ruin of village industries Profit and not Service became the chief motive of production Wages and prices came to be largely determined by competition and relationship between supply and demand

Modern Change in Village Economy—The important changes brought about by this transition may be noted as below

1 The increased foreign trade due to the improved transport facilities brought cheap manufactured articles from abroad into the villages and reduced the country to a mere supplier of raw materials It meant a collapse of Indian industries

2 The decline of the Indian village industries meant unemployment for a large number of village artisans and craftsmen Ultimately either they fell back upon agriculture or migrated, though only temporarily, to big towns to find employment in factories Most of them degenerated into mere wage-earners in agriculture elsewhere

3 The increasing pressure of population on land led to sub-division and fragmentation of agricultural holdings

4 Attractive profits, which arose due to increased demand for agricultural produce, led to a rise in the value of land and finally to competition for its possession by any means Under keen competition small cultivators had to give up their holdings in favour of rich agriculturists and money-lenders It also accounts for the growing rural indebtedness

5 Commercialisation of agriculture is another effect of this transition. Subsistence crops were subs-

tituted by commercial or non food crops This change was very much facilitated by improved facilities for irrigation and transport and the introduction of money economy Increased demand, particularly from abroad, for cotton, jute and oil seeds greatly stimulated such transformation

6 Facilitated by easy means of travelling, there also started a regular movement of workers from rural to urban areas in search of employment This caused a great scarcity of agricultural labour, notably during the busy months of sowing and harvesting

7 Perpetuated by the foregoing factors, there was also created a class of landless labourers whose position and status had been degraded to that of an ient Indian 'Das' or European 'serf'

The System of Land tenure —In ancient times, individual ownership of land was rare The cultivators however, paid a share from the produce of their land to the ruling chief, who in return protected them from attack and aggression Gradually, with the growth of population and the consequent increase in the number of cultivators, there originated the system of 'collection' of such dues 'Collection' then became a task and was done on behalf of rulers by a set of people called Revenue Collectors They ranked as intermediaries between the State and the cultivator and can be rightly held responsible for abuses which are frequently hurled at their system, organisation or profession They found a suitable opportunity during the days of political disorder that ensued after the decline

of the Mughal Rule and adopted all measures to exact as much as they could from helpless cultivators When the Br tishers came to rule they had the least desire to change the existing system nor to introduce any modificat on so long as they received sufficient revenue for their purpose However over large areas in prov nces like Bengal, B har, and Madras, the revenue dues were fixed permanently But subsequently the Government realised that they had not done so in their own interest and, therefore, temporary settlement was made in other provinces like the Punjab, the U P, C. P and Bombay where it is revised after every 40, 30, 20 and 30 years respectively

The present system of land tenure can be divided into three classes ,

1 *Pyotwari System* This is an important feature in Madras, Bombay and Assam Under this system each cultivator or *ryot* is directly responsible for the payment of revenue to the Government

2 *Zamindari System* Under this system land is owned by one or more persons and they are responsible for the payment of the land revenue. Permanently settled zamindari is a special feature of Bihar and Bengal. Madras, Orissa and the U P also possess areas under this system

3 *Mahalwari* or *Joint village tenure* is another system which is the dominating feature of the U P, the Punjab and C P and Berar Bengal also has small areas under this system In this system the village is held by the village community and

the members there of are responsible for revenue both jointly and severally

Land Tenure System in the U P The system of land tenure in the U P has a long history There have been a series of Acts regarding the land tenure system The first Act to be applied to the province which was then known as the North Western Province was the Rent Recovery Act, 1859, which was really passed for the Presidency of Bengal This Act was subsequently amended in 1863, 1873, 1881, 1886, 1890 and 1891 Finally the Act was again consolidated in 1901 as the N W P Tenancy Act, and then as Agra Tenancy Act in 1926 Similarly for the province of Oudh there existed the Oudh Rent Act 1868 which was amended in 1886 1890, 1891 and 1901 All these changes were finally consolidated in the Oudh Rent (Amendment) Act, 1921. These Acts primarily aimed at providing a suitable machinery for the collection and regulation of rent dues So long as enough land was available there did not arise any serious problem of 'right over land Gradually this problem began to attract public attention due to the growth of population and the increasing 'dominating' and 'repressive' measure adopted by the landlords over the weakening tenantry In 1921 and 1922 the growing agrarian discontent took the shape of the 'no rent campaign' and the '*Eka*' movement Accordingly, to pacify the cultivators changes were made in the Oudh Rent Act of 1921 and the Agra Tenancy Act, 1926 In spite of these changes, nothing substantial could be done to improve the lot of the poor cultivators The Congress Ministry took over the ad-

ministration of the province in 1937. True to its promise, the Ministry introduced drastic changes in the land system of the province by passing the U. P Tenancy Act, 1939. Later on again, in the light of the observations made on the working of the said Act, certain important changes were made in 1946 In 1949 a Zamindari Abolition and Land Reforms Bill has been introduced in the legislature under it all intermediary rights shall be acquired by the state and peasant proprietors (*Bhumidhars*) and hereditary tenants (*Seerdars*) shall be created. The latter can pay ten years' rent and become Bhumidars. Subletting is to be allowed in case of minors and the incapacitated.

Under the present Tenancy Act, the following classes of tenants are recognised —

1. *Permanent Tenure Holders* These are intermediaries between the landlord and the occupant. They hold permanent and transferable interest in land in permanently settled areas.
2. *Fixed-Rate Tenants* They hold land in permanently settled districts Their rents are fixed. Their number is larger than that of the permanent tenure holders.
3. *Tenants holding on special terms in Oudh* · They hold under a 'Special Agreement' or a 'Judicial Decision'. They have the same rights and liabilities as the Occupany tenants
4. *Ex-proprietory tenants*. They hold rights of cultivation in *Sir*, and '*khudkasht*' land which they cultivated continually for three years, in case

of the permanent transfer of owner-ship rights in all their land

5 *Occupancy Tenants* These are those cultivators who have acquired the right of occupancy under the previous Acts and who are not fixed-rate nor ex-proprietory tenants.

6 *Hereditary Tenants* These hold hereditary rights Their number is the greatest in the province

7. *Non-occupancy Tenants* All other tenants who are not covered under the above six classes are non-occupancy tenants and include sub-tenants of *Sir* and tenants of land in which hereditary rights do not accrue

The changes made in the tenancy law of the province after 1939 are of material importance inasmuch as these have decidedly given a great relief to the poor peasantry. *Sir* rights have been reduced. Rents are likely to be reduced within a short period of time. The rate of interest on arrears of rent has been reduced Ejectment has been made a little difficult The right to make permanent improvements and to construct houses on land has also been given to the tenants

Agriculture and other industries —The oftrepeated phrase '*India is an agricultural country*' *is sometimes wrongly* interpreted It does not mean that in the past India had no flourishing industries except agriculture It simply points out that agricultural occupation was considered to be the most important of all other occupations The present industrial backwardness of Indians is due mainly to the apathetic attitude of the past foreign rulers who

always discouraged handicrafts and industries in India in order to encourage the same in their own country

India had won recognition of her artistic skill and workmanship even as early as the days when Western Europe was inhabited by uncultured tribes The muslins of Dacca were well known even far beyond India The ivory, gold and sandalwood works had gained a world wide fame for their fineness Cotton and silk industries enjoyed sufficient trade in their manufactures, which were even exported Linens, prints, jewels embroideries, dyeing, metal work, carving and paper making were all in a flourishing condition even as late as the establishment of the East India Company. The Iron Pillar at Delhi is sufficient to show the metallurgical skill and the high standard that had been attained by Indians as early as the fourth century Kashmir is still remembered for its glorious woollen shawl manufactures Mysore was well known for silks Ancient historical records also bear ample proof for excellent working of glass and sugar industries Historians have also fairly established 'the early existence of a complete navigation of the Indian Ocean, and of the trading voyages of the Indians

It is thus clear that India had in the past a well organised all round industrial development The decadence of our small as well as big industries has created many socio-economic problems for the Indian people

Sub division and Fragmentation of agricultural holdings Among the various problems created by the downfall of the Indian industries, one of the most important problems is that of the division of agricultural holdings into tiny and

scattered plots. This is due to the fact that the growing population has fallen back upon agriculture. The evil is due partly to economic reasons and partly to the Indian laws of inheritance under which the property is divided equally among the heirs. Ejectments also cause sub-division and fragmentation of holdings. The new purchases or the exchange of old plots with new ones too account for this uneconomic nature and size of Indian agricultural holdings. The differences in fertility and accessibility of land are equally responsible for the unsatisfactory character of agricultural holdings in India. Small and scattered holdings benefit cultivators in as much as they secure a variety of soils and protection from the vagaries of Nature. But such holdings do more harm than good to the cultivators for they lower the yield per acre, check permanent improvement on land, delay the introduction of scientific manures and labour-saving devices. They check scientific rotation of crops and discourage the growing of improved varieties of crops Cultivators have to waste much time, money and energy in looking after a large number of plots These in turn increase the expenses of production

The evil effects of sub-division and fragmentation of holdings have been understood by all interested in the problem. Measures have been taken to combat such effects in provinces like the Punjab, the U P and the C P. The entire work of consolidation has been done on co operative principles through co-operative societies The scheme of consolidation becomes binding upon people if it is accepted by at least two-thirds of the members in the Punjab and the U P. In the C P. a scheme of consolidation is prepared when one half of the vil-

lagers holding two-thirds of the land desire consolidation of their land holdings The attempts at consolidation of holdings have been successful more in the Punjab than in other provinces In the Punjab the success is due chiefly to few tenancy problems and greater homogeneity of soil In the U P consolidation work has been greatly hindered by complex tenancy problems as well as due to the heterogeneity of the soil

Rural Indebtedness —This is another serious problem which needs our careful consideration in the study of the Indian village economy As the income from agriculture gradually decreased, it compelled a large number of Indian peasants to borrow from the local moneylenders, mahajans or zamindars, who took undue advantage of their position and lent money on usurious rates of interest The rate of interest is unduly high due to a number of reasons The cultivators have no security to offer There is a limited supply of loanable funds There is a great risk and inconvenience involved in the realisation of money As most of such debts are taken for consumption purposes, in total disregard of the repaying capacity, indebtedness is inevitable Unbalanced expenditure against limited income naturally results in increasing indebtedness The inadequacy of properly organised credit agencies and effective legislation to minimise indebtedness have further weakened the economic position of the Indian *ryot* The Central Banking Enquiry Committee estimated the total rural indebtedness in India to be nearly Rs 800 crores in 1930 Since then the economic conditions have fallen very low So the amount of debt increased tremendously in the thirties

Steps have been taken in practically all the major provinces by passing suitable debt legislation with a view (a) to control and to restrict uneconomic loans, (b) to regulate the rate of interest, (c) to provide credit facilities on stated terms for specific objects, and (d) to scale down or cancel old and chronic debts under special circumstances. In the United Provinces, measures have been adopted on similar lines The rules made under the Land Improvement Loans Act, 1883, allow credit for improvement of land Taqavi loans are provided for the relief of agriculturists The Bundelkhand Alienation of Land Act, 1903, controls conditional sale, mortgage and transfer of land from one tribe to another The Usurious Loans Act, 1918, gives additional powers to courts to deal in certain cases with usurious loans. It treats the rate of interest to be excessive if it exceeds 24% for unsecured loans and 12% for secured loans The Agriculturists' Relief Act, 1934, makes provision for relief from indebtedness It binds a creditor to keep a regular record and maintain a correct account of all transactions relating to each loan advanced to an agriculturist debtor He is to supply every year a full account and a correct statement of account to the debtor It further provides for penalty for entering in books of accounts a sum larger than that actually lent and for not giving a receipt The Encumbered Estates Act, 1934, aims at benefiting land holders whose property is encumbered with debts. The Debt Redemption Act, 1940, was made to provide further relief from indebtedness to agriculturists and workers. The Regulation of Agricultural Credit Act, 1940, seeks to prevent ex-

cessive borrowing by agriculturists For this purpose it limits the amount that can be obtained by execution of decrees against agricultural produce The creditor cannot realise a sum greater than the original loan as interest That is, the debt cannot exceed double the original loan

'*Rural unemployment*' —'Rural unemployment' is another important problem which is disturbing the Indian village economy In the absence of subsidiary occupation, more and more of the population has become surplus They form an intolerable burden to support Due to the lack of adequate irrigation facilities, agriculture too engages the workers for only four to nine months *in a year Other factors like the size of agricultural* holding, soil fertility and rotation of crops also influence the duration of agricultural employment For their spare time, the workers have no such occupations as can be profitably followed in the villages Some of them, live in villages near industrial towns and migrate to the towns to take up temporary jobs Others remain idle and waste time in picking up quarrels with their neighbours or in celebrating social functions or marriages, etc., in which the expenditure is always beyond their means Only half hearted measures have been adopted to mitigate the disadvantages of such unemployment Some of these measures are provision of increased irrigation facilities, provision of manures to encourage more intensive cultivation reclamation of land, promotion and development of cottage industries Industrialisation in the country, though on a *very limited scale also induces* rural labourers to migrate to towns and undertake more

remunerative employment in industries. The migration of labourers has been further facilitated by the improvement in transport facilities. But, because people are generally 'home-sick' and have greater attachment to their 'land', they have not benefited much by these opportunities.

Social Customs · Social customs play a very important part in the economy of the Indian village. It is due to the social customs and the unwillingness to let ancestors suffer in hell, that every generation agrees to pay the ancestral debt. They lay down where to marry, what to eat, what to wear and what occupation to follow. The ideal of monogamy and the prohibition of widow remarriage affected the growth of population. Of special importance is the caste system. It lays down what work persons of different castes can undertake. Thus the Brahman and the Kshtriyas do not plough the field. If labourers are not available, cultivation suffers. A *Shudra* cannot become a trader, although he may have the capacity and the efficiency to become one.

'Castes' may be functional, sectarian or racial. Functional castes are those which represent the occupations followed by people belonging to that caste, *e. g.*, village artisans like potters, weavers and carpenters or village servants like washermen or barbers. There are other functional castes like *Brahman* and *Vaishya* Sectarian castes originate from certain sects like the Lingayats of Bombay. Racial castes represent races like Rajbansi, Koli or Nayar. The principle of caste distinction had its root in 'division of labour'. The caste groups served the purpose of

ancient *guilds* and protected the interests of their respective members. The system of caste also protected racial culture and purity Yet as indicated above the system means uneconomic use of manpower and the resources. However, with recent awakening in all aspects of man's living, the system is showing signs of decadence It appears to have outlived its utility and is now denounced by all in as much as it restricts mobility of labour and capital, kills initiative and enterprise particularly among the lower castes, is opposed to all principles of equality and fraternity and is largely responsible for class conflicts in a society

III

PROBLEMS IN INDIAN AGRICULTURE

In the last chapter it was indicated that the village economy has changed. Yet it is predominantly agricultural. The organisation and management of agriculture must therefores be studied. The characteristic of organisation and management are best understood by studying their defects. Nine defects may be mentioned.

Organisation and Management of Agriculture Defects. Firstly, the area cultivated by a farmer consists of a number of plots which are unusually small in size and are scattered about the village. It leads to more expenditure. It becomes difficult to arrange for the irrigation facilities. Proper and timely attention cannot be paid. The farmer has to run from plot to plot for ploughing, manuring, weeding and for protecting the crop from being damaged by the birds, animals and even men.

Secondly, the cultivator does not have good seed. He grows the local varieties. He tries to keep a part of what he products for use as seed next time. But more frequently he depends on the village *Baniа* or *zamindar* for the supply of seed. These agencies are not bothered about supplying the better varieties. The Government seed stores have been opened, but they have not served the purpose. Either those in charge of these stores have proved to be corrupt, or the supply has been inadequate. Co-operative seed stores have succeeded to some extent, particularly with regard to sugar-cane. Little attempt has been made to popularise the better varieties of seeds which are produced after considerable research by the

various Government agricultural research departments Under the new development plan in the U P , the district development associations have taken charge of the Government seed stores

Thirdly, the cultivator is not better advised and convinced as to what crops to grow and in what order. Proper selection of crops can help maintain the fertility of the land and reduce the manure requirements Proper selection can also secure a supply of better and more well-balanced food, as also a greater income from the sale of the crops The cultivator depends on what he has learnt from his father and on the innumerable savings current in the village regarding crops Generally he follows a particular system of crop rotation He also raises mixed crops He mixes the seeds of a number of crops and sows them He harvests the crops either at different times or together The problem of crop rotation has received some attention from the Government, but mixed cropping has been neglected The cultivator also is not sure whether he should combine cropping with animal husbandry, and how to do so This is called mixed farming and has still to be popularised

Fourthly, the cultivator does not have facilities for proper and adequate manuring. He tries to preserve the dung But a large part of it is used by him as fuel due to the shortage of wood fuel Whatever he does conserve also loses a large portion of its vitality on account of the wrong ways of conservation Besides the cow dung, he also requires other natural and artificial manures He can grow certain leafy plants, plough them in the field and thus have green manuring He may convert the

refuse into manure He may buy certain chemicals like ammonium sulphate and phosphates and use them as manure These are called artificial manures and are not produced in India The Government is taking steps to *develop the production of artificial manures*

Fifthly, the tools and implements available to the *farmer are generally made of wood and a few pieces of* iron The efficiency of the plough, the hoe, the sickle, the water lift, etc , need to be, and can be, increased to a great extent There are innumerable forms and modifications of these in use all over the country Even a comparative study of all forms would enable improvements to be made No such study has been undertaken For many years the engineering section centred its attention only on machinery for tubewells Of late, the attempt is being made to provide tractors owned by the Government for cultivation But, ultimately, our welfare lies in improving the tools and implements being used by the farmers

Sixthly, bullocks and buffaloes, who draw the plough and the leveller and who thresh the corn are lean and thin, weak and emaciated, and of an inferior breed The cultivator would benefit to a greater extent if he maintained one pair of strong bullocks For this, two remedies are necessary The breeding of the inferior cattle should be stopped The farmer should be made to combine crop-production with fodder production In other words, he should undertake mixed-farming The experiments, undertaken about mixed farming at Meerut, Bareilly, Lucknow and Gorakhpur indicate that the profits are at least twice than that under ordinary farming.

Seventhly, the farmer does not have full irrigation facilities He generally depends on the monsoon Canals have been constructed in Eastern U P Tubewells also have been sunk in Eastern U P The rate of progress has been slow Besides, canal and tubewells sometimes overlap and serve the same area They would be of greater service if they had been properly distributed In addition, the canals are not properly drained A substantial quantity of water is absorbed by the canal bed and it reappears in localities on lower levels This causes water logging Thus not only land is lost to cultivation but these areas become breeding pla es for the mosquito The distribution of the canal water is neither in time nor in adequate quantity The farmer pays for the canal water in proportion to the area of land, irrespective of the amount of water received It is therefore, not surprising that wherever there is no canal, the villagers are always crying for one, but wherever there is a canal, the villagers are always cursing it

E ghthly, the farmer also experiences a shortage of labourers at the t me when he requires them most, suc i as at the t me of plough ng and harvesting more so after World War II

Lastly, the organ sation and management of agriculture is not up to the mark because of the undesirable situation in regard to the land system, agricultural finance and the marketing of his crops There are also too many persons ready to cultivate land, because other sources of employment do not exist adequately The problems of land tenure, finance and unemployment have already been dealt with in the last chapter As regards

marketing, the cultivator does not know the market prices He cannot postpone the sale of the crop because he must get money to pay the rent and to meet the debt obligations Besides, he is generally bound by a promise to sell the crop to the *Mahajan* from whom he takes loans Even if he is free from such a promise, he has little transport facilities In addition to low prices, the purchaser uses wrong weights and measures, and makes a number of illegal deductions from the price on account of weighing charges, accounting, coolie charges, refraction, charity, etc Therefore, the cultivator fails to get but a low price for his produce. The fundamental difficulties are that he is illiterate, unorganised and financially weak Co-operative marketing societies would be the best solution for this sad state of affairs, but these have not been developed

Remedies —In a way the defects themselves indicate the remedies The holding of the cultivator must be consolidated compulsorily Even then more than half of the holdings would be too small in size to be profitable In order to increase the size of the holding further, people should be tranferred from agricultural to non agricultural occupations In other words, industries, particularly rural industries, should be organised

In order to make the best use of land, the soils should be surveyed The present knowledge regarding the different kinds of soils is not sufficient and uniform. While greater attention has been paid to the laterite and the black soil, alluvial soil is not properly defined There is meagre information about the desert soils, forest soils,

and the peaty and marshy soils. A correct knowledge is essential to grow the best crop A careful study must also be made of the system of mixed cropping to suggest improvements In order to convince the farmers about the improvements the mixed farming, or about the use of a new variety of seeds demonstration farms should be started Demonstrations should be given using the methods of the cultivator Then the cultivator would believe in what he sees Once he is convinced, he would readily adopt the new methods These demonstration farms should also be sources of supply of improved seeds

The demonstration farm is also important for teaching the farmer how to conserve the cowdung and how he can profitably use the green manures Artificial manures (fertilisers) have to be produced inside the country The Government of India is planning a number of factories One of them shall be at Sindri, in Bihar But artificial manures require more canals For these canals, a better way will be to collect and use the surplus water of the rivers during the rainy season behind dams and use it in the off season The water falling from the dams can also be used to produce hydro electricity Many such schemes are being undertaken in the country on the rivers Damodar, Mahanadi, Nerbnda, Krishna, Tungbhadra, etc In U P the Rihand Dam near Mirzapur is most important

It is also important that the price charged for the canal water should depend on the quantity of water supplied and not on the areas irrigated Besides, more wells should be constructed If electr city becomes available it shall be better to construct tube-wells

In order to improve the cattle, an attempt should be made to improve the breed and reduce the reproduction of the inferior breeds Just as the U P Government has decided to segregate the dry cattle, similarly it may collect the inferior bulls Superior breeds may be supplied from cattle breeding stations, or co operative cattle breeding societies may be started By introducing the system of mixed farming, the supply of fodder for the cattle can be increased Experiments in mixed farming have been successfully carried out under the Indian Council of Agricultural Research in the U P, the C P, Sind and the Punjab Mixed farming has meant a hundred per cent increase in the net profit from farming and also better diet for the farmer's family

To enable the cultivator to secure better prices, the system of co operative marketing should be developed The difficulties of the marketing societies have been lack of loyalty on the part of the members, lack of trained personnel, difficulty of storage and finance The provincial Government can help by spreading co operative education and training They can also make grants and loans for the construction of godowns as has been done in Madras, Bombay and Mysore Or, they may develop warehouses, as is being done in Bombay, and make over the godowns constructed during World War II for the Civil Supplies Department to the warehouses. Goods can be kept in the warehouses and the receipts issued for them could be used to get financial help from the Reserve Bank of India

Besides, the marketing operations in the mandis should be regulated The establishment of regulated

markets would result in a fair fixation of price, use of correct weights and measures, less exploitation and better *staying facilities for the farmers* Before the war, the U.P Government had under consideration a bill to establish regulated markets, but it has not reached the statute book as yet

Small and Large-Scale Farming — It has already been mentioned above that the tools and implements of the cultivators need to be, and can be improved Not infrequently, it is also argued that power driven machines such as tractors, harvestors and combines should be used This assumes that large scale farming is better than small-scale farming

Large-scale farming secures marketing and technical economies The farmer can buy his requisites such as seed, manure and fertilisers cheap He can sell his produce at more favourable prices As he shall have large quantities to sell, he can even grade the produce and secure higher prices for the better grades Similarly, he can purchase and use agricultural machinery, such as tractors and combines Also, one man can concentrate on supervision and management and leave the unskilled manual work to paid labourers But the labourers would not be concentrated in a small area This does not happen in a mill Scattered workers make supervision difficult Also, every crop cannot be grown on a large scale Only crops which do not require personal attention can be profitably produced Agricultural operations depend on season and sudden variations would necessitate immediate reallocation of work This is not possible if the workers are scattered all over a big area The

agricultural labourers are also less submissive and more difficult to manage than factory workers As a result, it may well be said that large scale farming can be successfully adopted only where we have plenty of new land, plenty of cheap labour, and such climatic and soil conditions that we can grow a crop which does not require personal attention

The disadvantages of large-scale farming are the advantages of small scale farming In this case, the farmer can do away with hired labour He can easily adjust his operations to changes in seasons He can pay personal attention to the crops He is likely to gain more, if he decides to produce fruits and vegetables It is less profitable in the case of cereals such as wheat, rice, jwar, etc , if the area is not sufficiently big Small-scale farming is practised in countries like India and China and about three-fourths of the cultivated area is devoted to food production Yet the farmers carry on, because they cultivate more for subsistence than for profit.

The advantages of large scale farming become the disadvantages of small-scale farming But the small-scale farmers can overcome these disadvantages by forming co-operative societies for purchases and sales, ploughing, irrigation and harvesting, and also finance Yet the farms or holdings in India are too small to allow the farmer even to eke out a bare subsistence Their size must be increased

Mechanisation of Agriculture —Does the discussion about the scale of farming mean that there is no scope for tractor farming ? The answer cannot be a small 'No'.

There are areas where large scale farming is being carried on There may be areas like plantations where large scale mechanical operations may have scope for applica tion Tractor farming is also practicable for reclaim ng and opening up the Tarai land, and for eradicat.ng *kans* from the *kans* infested area But there is tremendous scope for improving the tools and implemer.ts used in agriculture It is wrong to say that the Ind an cultivator is averse to adopting new and improved mechanical devices The Indian cultivator has readily adopt•d the iron shoe for his plough Iron cane-crushers and the hand-driven centrifu•al machines have also rap dly come in vogue If a new machine s not costly if it is s mple and easy to work with human or bullock power, if it can be repaired in the rural area and if its use shall benefit his earning power the cultivator would readily adopt it

The engineering section of the Agriculture Department in the U P has paid too great an attention to appliances for boring wells It has not even made a comparative study of the various types of ploughs and other tools and implements used all over the province There is the necessity for a cheap harvester, thresher and winnower The waterlift has to be improved The design of the country cart has to be improved It is very likely that after some years cheap electric power shall become available in the rural areas That shall open the scope for driving machines by electric power Oil pressors milk separators and churns which can be worked economically in the cultivator's home have yet to be invented.

It must now be clear that by mechanisation of agriculture we mean the improvement of the existing tools and implements and the introduction of the use of machines which would help the farmer in the home, at the well, in the field and on the road There is tremendous scope for such mechanisation The farmer is not averse to mechanisation He readily tries to adopt a new device as soon as he is convinced The Indian cultivator is intelligent and his intelligence would allow only really good devices being introduced The introduction of costly machines would be slow due to lack of capital and technically trained men It would be better if we keep another factor in view Most of the machines are labour saving Their introduction would release labourers from agriculture These must be employed in some other occupations The rate of mechanisation should be such that the released labour force gets employed elsewhere.

Commercialisation of Agriculture — Bes de mechanisation, there is another aspect of Indian agriculture which requires our serious attention The British were interested in exploiting this country They wanted to make India supplier of raw materials and a consumer of their manufactured products Consequently, they paid more attention to the commercial crops such as cotton, jute, tea, sugarcane and groundnut These are the non-food crops Between 1910 and 1932 the food crops increased by 33% but the non food crops increased by 66% in value Even by quantity, the increase under commercial crops has been double the increase under food crops during the first thirty years of the present century. During the British rule, some area has been

brought under improved varieties Here too the same tendency to favour the commercial crops is evident Out of the total area under different crops, the percentage area under improved seed is 80%, 50% and 19% for sugarcane jute and cotton, while it is only about 21% and 4% for wheat and rice It is high time that this tendency be changed We must ensure self sufficiency in regard to the production of food not only on a national basis but as far as possible on regional and local bases The production of specialised commercial crops should come only after the achievement of self sufficiency with regard to food

IV

STATE AND INDIAN AGRICULTURE

Agriculture is the key industry of India and t is n the systematic development of agriculture that her future welfare lies It is equally true that no industry can thrive well w thout State a d of all kinds We shall he e briefly describe the various measures that have been adopted by the Government to help the agricultural industry of India

Agricultural Departments and Policy — Dur ng the pre British period, there was at least no uniform scheme for the whole country due to diverse political interests The Brit shers too in the beginn ng had no desire to change the existing agricultural conditions so long as the r own bus - ness and polit cal nterests d d not demand any change The Orissa famine in 1866 and the grow ng interests of cotton manufacturers in Lancashire made the Government think of the desirabil ty of establish ng separate Agricul- t.re Departments These were ultimately created in 1884 In 1889, the masterly report of Dr Voelcker threw much light on Indian agr culture and urged upon the Government the need for sc ent fic nvesti_at ons In 1890, an Agricultural Cor ference was held and on its recommen- dat on, an Agricultural Chem st to the Government of India was appointed An Inspector General of Agricul ture, a Mycologist and an Entomclog st were also appoin ed in succeed ng years The Pusa Research Institute was established in 1903 All such steps were taken in order to give effect to the various recommendations of the

Famine Commissions of 1898 and 1901 and also because of the b tter experience made during the severe draught from 1895 to 1899 The financial needs of agriculture were also realised The Co-operative Credit Societies Act was passed in 1904 to give financial help on co operative principles The Central and Provincial Agricultural Departments were expanded in 190o and in the same year an All-India Board of Agriculture was established In 1906 Imperial Agricultural Service was started. With a view to helping the research and demonstration work in agriculture, agriculture colleges were opened at Poona, Kanpur, Nagpur, Lyallpur, Coimbatore and Mandalay in 1908 and subsequent years After the Reforms of 1919, agriculture became a Transferred Provincial subject in 1921 This gave the provinces full liberty to improve agriculture according to local conditions The Bombay Presidency Agricultural Show held at Poona in 1926 had a great publicity value The Government showed probably their utmost interest in agriculture by appointing the Agricultural Commission in 1926 which submitted its report in 1928 The Report is indeed a masterpiece voluminous record on Indian agri ulture It throws a flood of l ght on the conditions of Indian agriculture in its various aspects with most suitable recommendations The Great Depression of 1929 adversely affected the agricul ural industry The Government d d not show much cause for anxiety to set matters right on the plea that such condit ons were not local but international, and so no one country alone could solve the problems created by the World Depress on However, the Indian (then called the Imperial) Council of Agricultural Research had

its b rth in the same year. In 1935, the Reserve Bank of India was established with an Agricultural Credit Department attached to it It was to serve a long felt need of the country in respect of financial requirements of agriculture The installation of popular Ministries in 1937 furth er accelerated the progress of agricultural reorganisation. The Rural Development Departments were estabi shed in the provinces specially for the purpose of improvement and reconstruction of v llages But th s period was only short lived and the Congress had to quit office on the outbreak of World War II in 1939 Since then, except for soaring pr ces of agr cultural produce, the general conditions have deteriorated very much The agricultural production, as is publicly admitted, has suffered greatly The country is now face to face with a food cris s, which can be averted only with a bold policy of agricultural improvement Such a pol cy should be based on Nat onal Economy This aspect had been neglected in the past and hence it is emphasised here particularly

Research and Educatior — The importance of research in agriculture was well summarised by the Royal Commission on Agriculture in 1928 It wrote in its Report, "The bas s of all agricultural progress is experiment. However efficient the organisation wh ch is bu lt up for demonstration and propaganda, unless that organisation is based on research, it is merely a house built on sand" The Commission further critically remarked on the position of research in Ind a, 'The claims of research have received a half hearted recognition and the importance of its efficient organ sation and conduct is still little

understood " Accordingly, it proposed the establishment of an Imperial Council of Agricultural Research This body was created in 1929 It now serves ( ) to promote, guide and co-ordinate agricultural and veterinary research throughout India, (ii) to link such research in India with that in other parts of the British Empire and in foreign countries, (iii) to provide facilities for training research workers, (iv) to be the clearing house of information relating to agriculture and veterinary matters; and (v) to provide published material on subjects of its review and interest The I C A R has sound financial resources and s governed by experts and specialists in different branches of agriculture The aim of imparting education is achieved through agricultural colleges These colleges undoubtedly meet the need for education in agricultural methods and practices, but save for their limited propaganda work, they have failed to improve the common technique and old practices followed by Indian agriculturists This defect is certainly not inherent in the institutions themselves but in the manner in which such education is imparted and the men to whom such education is given After receiving that education, hardly any of the students wishes to settle in life as an ideal agriculturist This is because of high cost of education which boys from ordinary agricultural families cannot easily bear, while those from the families of landlords and other classes, who are trained in agriculture, never think of it as their profession in life due to its degraded position as compared with 'service' ranks There are other difficulties also which discourage people from following agriculture on most up-to-date and scientific lines.

Non availabil ty of modern agricultural machines, unsatisfactory and inadequ te transport facilities in the rural areas, falling values of agricultural produce in the recent past, more lucrat ve employment in cities and lack of modern amenities of life in villages are the important factors which discourage people from returning to agriculture after education

Irrigation—Water is as important for agriculture as it is for man s life Indian agriculture depends solely upon rainfall for water supplies More than three fourths of the cultivated area derives irrigation from Nature and only one fourth area is irrigated by artificial means The *ra nfall s known for its uncerta nty and uneven distribut on* over the whole country Under such circumstances, the need for artificial irrigation fac lities can be easily understood The Government are quite aware of this need and from time to time have taken measures to provide irrigation fac lities We may divide the Government works into two classes 1 Productive and 2 Non-productive Product ve works are those which, with n ten years of their completion, produce revenue enough to meet their working expenses and the interest charges on capital invested in them Non productive works gene rally provide protection to precarious regions and the object is not to derive profits from them Most of the Government projects belong to the former class The different *kinds of irrigation works include canals*, tanks and wells Among these, canal irrigation is by far the most important Canals are constructed in areas where land is soft and fertile It should return a good revenue to the Government and there should also exist

perennial rivers to supply water to the canals Canals may be divided into two classes, *viz*, inundation canals and perennial canals Inundation canals are drawn from rivers without the use of any barrage. They are seasonal and supply water only when the rivers from which they are drawn rise above a certain water level Perennial canals derive water from rivers by putting some barrage across the rivers They flow throughout the year Most of the canals in the U P, the Punjab and Madras belong to this type Sometimes the Monsoon water is also stored in reservoirs or dams and from them perennial canals are drawn to supply water all the year round In the distribution of canals, the Punjab and the U P get the largest benefit This is due to the existence of a number of big rivers and good soil in the two provinces Tanks are special features of the Madras province and the Deccan Peninsula and the C P It is so because of the irregular and rocky earth surface which makes it very difficult to build other works Wells serve nearly one fourth of the irrigated area and are a common feature of the U P, Bihar and Assam.

The Government have shown an increasing interest in irrigation since 1901, when the Irrigation Commission was appointed The area under irrigation has been steadily increasing both in its technique and volume For proper co-ordination and research, the services of the Central Board of Irrigation and the Central Bureau of Irrigation are invaluable The Bureau is like an adjunct of the Board and aims (i) to give information on irrigation and allied matters, (ii) to co-ordinate and disseminate research and its results, (iii) to arrange for the discussion of irrigation matters in conferences of

provincial officers of irrigation, and (iv) to establish contact with other countries with a view to achieving successfully its object through publication, etc Irrigation is now a transferred provincial subject and the provinces are given much freedom to undertake irrigation projects

In order to solve the irrigation difficulties at an early date the Government of India have appointed a Central Waterways, Irrigation and Navigation Commission, whose main function concerns the development of multi-purpose river projects Under this scheme, dams are to be built on important rivers The water collected behind the dam would serve three purposes Water shall be used to produce hydro electricity It shall be used to provide irrigation it shall put a stop to floods which cause loss of money life and property every year in different parts of India The provincial Governments are actively co-operating with the Central Government in this regard Besides, for the short period, where possible, provincial Governments, as in the U P, are making a drive for digging new tanks and renovating the old ones through the development associations

Credit & Finance —Credit is indispensable for the growth and development of modern industry In the past, production was limited and therefore personal resources were quite sufficient for it Now the goods are produced on a large scale and for future demand It requires a long-term heavy investment of capital, and that too is not free from risk Further, private funds and enterprise or initiative are limited and hence

very much limited in its scope and so in the light of the experience gained, it was amended in 1912 The Maclagan Committee made a searching inquiry into the whole co-operative movement in India and made strong recommendations for its thorough overhauling and complete reorganisation The Reforms of 1919 made Co operation a provincial transferred subject It enabled local governments to modify the Act of 1912 to suit their local conditions and requirements Accordingly provinces like Bihar and Orissa, Madras and Bombay took advantage and introduced a number of changes to advance the cause of Co operative Movement The Co operative Movement on its credit side has primary credit societies, land mortgage banks, Central Societies and Provincial Banks The liability in the case of Agricultural Societies is unlimited They raise money from share capital, deposits, entrance fees and loans Dividend hunting is not their motive A low rate of interest and mutual help are their main features Central agencies raise money from share capital, loans, reserves and deposits They finance mostly the primary societies Provincial banks are the co-ordinating agencies over their respective provinces Land Mortgage Banks were organised with a view to giving long-term finance to agriculturists There are three main types of such banks 1 Banks doing business strictly on co operative lines, 2 Banks doing business purely on commercial principles of profit, and 3. Banks of a mixed nature The land mortgage banks, except in Madras, have not made satisfactory progress due to conflicting nature of land tenure in different provinces which makes it difficult for the

agriculturists to borrow money on the mortgage of their hold ngs. Thus it will be seen that Co operation has worked in this country for more than forty years but it has only been a drop in the ocean. This does not underrate the Co-operative principles. Haphazard 'paper manufacture' of societies, under 'official patronage, inadequate and over-worked staff which is least gu ded by service' motive, overdues, improperly supervised soc eties, absence of Co operative training, research and education, and lack of an all India Co operative organi 'ation to co ord nate the provincial co operative activities are the chief factors responsible for restr cted growth of the Co operative Movement. It needs reor entation in outlook and a drastic change in the methods of approach. Co operation should be the people's instead of a State's movement and there lies the true spirit of co operat on for mutual help and guidance.

Agricultural Labour —The interests of agricultural labourers have been badly neglected. They form the backbone of Indian agriculture but are least looked after by the Government. Bad nutrition, insufficient cloth ng, insanitary surroundings, low standard of living, miserably low wages without protection of any sort and chron c indebtedness summarise their pitiable and abject condi tions. The Great Depression preceding World War II added to their agony. The war should have given some relief but it had an adverse effect. The rural cost of living has increased tremendously and their wages have lagged much behind. The cases of permanent slavery and debt bondage accentuated by 'begar' are rapidly increasing. The workers find it almost impossi-

ble to live in villages and there has started a sort of regular rural exodus to urban industrial centres It causes a severe scarcity of labour during the sowing and harvesting seasons The problems of women and child labour deserve special attention and protection No legislative measure has so far been taken to safeguard the interests of these labourers except the provision for minimum wages in the Minimum Wages Act recently passed by the Central Government Only recently the Central Government proposed to institute an enquiry into the conditions of life and labour of agricultural workers More critical days are ahead and the food problems will be solved peacefully by granting adequate protection to the interests of agricultural labourers

Marketing and Transport —In the absence of proper facilities for transport the marketing of agricultural produce will only be defective The producers are always forced by circumstances to sell their produce through cunning *Beoparis*, *Arhtias* and middlemen They are never able to get a fair price for their produce The Royal Commission on Agriculture drew the attention of all concerned towards this defect and in accordance with their recommendations, the Government of India opened a Central Agricultural Marketing Department in 1935 Similar Departments have since been also started in the provinces At present the activities of the Central Department are chiefly confined to Marketing Survey work for different agricultural commodities and the publication of such Survey Reports For purposes of securing and improving the quality of produce of certain commodities, the Agricultural Produce (Grading

and Marking) Act was passed in 1937 The Act applies to a number of commodities like fruits, vegetables, tobacco, oil seeds, rice, cotton, wheat, ghee, eggs and butter All possible efforts are made to control the quality of graded produce by the process of sample analysis The control of markets was later on considered desirable and, therefore, in provinces like the Punjab, Madras Bombay and the C P., the Agricultural Produce Markets Acts have been passed A bill for regulating the markets has been under consideration of the U P Government since 1939 The Central Government, in order to supplement the provincial efforts for the regulation of markets, passed the Standards of weights Act in 1939 In the U P also an Act has been recently passed to standardise weights and measures Except in the U P, the efforts made so far have only touched the fringes of the vast problem of Agricultural Marketing in India The greatest hindrance in the way of improvement is the difficulty of transport which is most primitive, slow risky and costly Unless transport facilities are adequately provided the results of all efforts may be anything but promising and hopeful. Rural roads and motor transport connecting interior areas to railway centres should have the first and immediate attention

V

DIVISION AND LOCATION OF INDUSTRIES.

Man has wants He makes efforts for the satisfaction of such wants and employs all his energies for this purpose to the greatest degree First he extracts or exploits all that he can from Nature and then he works upon these natural resources in order to make them suitable for his requirement Thus man's efforts are made in different directions and in different forms of production

Division of Industries —Such productive efforts of man as relate to direct exploitation or extraction of Nature s gifts are included in Extractive industries Productive efforts which are made for converting and combining the natural resources to produce different commodities are classed as Manufacturing Industries In the former class are included Agriculture, Mining and Fishing industries Industries like Cotton Textiles, Paper-making and Match belong to the latter class

Manufacturing industries can further be divided into (a) Home or cottage industries, (b) Small scale industries and (c) Large-scale industries Home or Cottage industries are those which are carried on in the homes or cottages of the artisans or workers, assisted by their family members Small scale industries are those which employ a limited amount of capital and labour and are not governed by the Factory Act. All other industries not included in the above two classes and to which the Factory Act is applicable are to be known as Large scale industries In

order to make the differences more clear we may arrange them as shown below

Cottage Industries	Small scale Industries	Large scale Industries
1 Absence of borrowed capital in general except in the initial period	1 Borrowed capital is also used	1 Capital is mostly borrowed
2 No 'Contract Labour	2 Limited 'Contract Labour	2 Full employment of 'Contract Labour
3 Restricted initiative and enterprise	3 Limited scope for expansion of initiative and enterprise	3 Unlimited expansion of initiative and enterprise
4 Limited production	4 Greater production	4 Mass production

Factory or large-scale industries can be further split into two classes (i) Those which create more employment for people and add to the nation's wealth, (ii) Those which simply produce goods on a large scale by replacing cottage industries In India, most of the industries belong to the latter class Textiles, rice and flour mills have been developed by throwing out a large number of workers formerly employed in cottage industries The absence of key industries, the lack of big machines, the lack of adequate and suitable finance, cut-throat competition by foreign capitalists and the apathetic attitude of the government chiefly account for unequal development of different types of industries in the past

Location of industries —Very often it is seen that an industry is centred in a particular region on account of cer-

tain advatages, *e g*, jute industrv in Bengal, cotton in Bombay and tea in Assam Such concentration is known as localisation of industries. Several factors lead to localisat on of industries They are summarised below —

1 Natural conditions —Favourable climat c conditions always favour the growth of industries suited to such conditions The cotton industry has developed in Bombay chiefly because of favourable cl matic conditions

2 Nearness to Raw materials —Naturally industries grow and thrive in such reg ons where the raw mater als are easily and cheaply available. The Jute industry of Calcutta and the Iron and Steel industry of Tatanagar may be mentioned as examples

3 Availability of Power —Power s the most important factor in the development of modern industry Electricity has rep'aced all other methods of generating power Industr es have recently grown up only in such centres where electricity is easily available

4 Access ibility to markets —Modern product on is for 'Markets' Therefore, industries spr ng up in such places which are connected bv easy means of communication and transport

5 Cheap and regular supply of labour —Labour is the second most essent al factor of production Industries have, therefore, shown a tendency to be localised in such areas where skilled as well as unskilled labour is readily available at all times

6 Advantages of early start —Sometimes an industry becomes concentrated in a localitv, becau e its product

has been produced there since long, and so it enjoys a very wide market

Advantages and Disadvantages of localisation —When an industry becomes localised in any region it stands to benefit in a number of ways (1) There is a rapid increase in the output and the *sale* of products caused by extension in goodwill, facilities for procuring raw materials and marketing of the products over a wider area 2 There can be effected better division of labour which may lead to inventions in processes of manufacture 3 There is a great possibility of the development of subsidiary industries which largely cater to supply raw materials to the parent industry or take over its finished or by products 4 Labour becomes specialised and skilful.

Against these advantages of industries, the greatest disadvantage is that it leads to overcrowding in such centres which are always beset with socio economic degradation and demoralization Another disadvantage of localisation is that in times of depression, a large number of persons in that locality are thrown out of employment Also the productive efforts of the people in the country are not evenly distributed over the whole country and so some areas become almost depopulated.

Decentralisation of industries —Decentralisation means location of industries in areas remote from those where they ought to be concentrated due to causes mentioned above Such decentralisation has been greatly facilitated by improvement in the means of communication and transport, which have linked even the interior places to big markets and *mandis* The extension of electric power

and overcrowding in big centres leading to abnormal rise in rents have also caused decentralisation of industries The danger of external attacks in times of war also causes the State to decentralise industries

Location of Industries in India —India's economy is characterised by a one-sided development This is true of Indian industries also Industries have developed but they are centralised only in a few trading centres like Bombay, Calcutta and Kanpur Port centres are specially preferred for the location of industries either because goods have to be exported or because the railway rates from the ports to the interior are lower Up country towns have chiefly specialised in the industries which collect and export raw materials to port towns This tendency of industrial location in India found favour with the Government's and Railway's policy to favour the flow of raw materials to the port towns and that of imported goods to the interior As a natural consequence, there are cities in the country which are over crowded resulting in high rents, high wages and increased cost of production for industrial produce and create many socio-economic problems for the inhabitants On the other hand, there are a large number of small towns which, in contrast to big industrialised cities, present almost a deserted appearance However the improvement in the means of transport and communication, and the extension of electric power have encouraged the dispersion of industries Another noticeable tendency is that Indian States too have started industrialisation by giving better facilities to enterprisers than those available in the erstwhile British India The diffusion of industries or even their

distribution over the whole country is highly desirable for it will facilitate the task of providing social welfare to the workers and public services, like education, medical aid and water and light, would be rendered more easily and conveniently.

Cottage Industries Vs Factory Industries—The subject is often greatly debated upon In fact, there should be no controversy over this issue if we weigh their importance from the point of view of national economy Both types of industries are to be encouraged and co-ordinated in order to speed up industrial production which is much less than the national demand for it We cannot altogether close down cottage industries inasmuch as they had a glorious past and even now give national pride to their products which are known far and wide for their fineness Cottage industries require small investment of capital and so the chance of incurring losses are little in times of depression There are no problems of 'Labour' and 'Capital' resulting in strikes and lock outs The workers enjoy independence and their profits are directly in relation to their workmanship and initiative. This results in greater output of work without encouraging a spirit of rivalry among the workers There is no 'exploitation' or 'sweating' of labour. Our past knowledge also establishes the fact that cottage industry products are more attractive, artistic and present a variety of designs There is no risk of overcrowding for cottage industries are spread over the whole country However, we should not overlook the fact that large-scale industries are as important as the cottage industries The former employ a large amount of capital and thus can afford to instal

gigantic machines which alone are capable of manufacturing goods rapidly cheaply and in huge quantities in order to meet the increasing requirements of the people at large-scale Producers can effect better economies and thus reduce the cost of production

State Aid to Industries —All industries, large as well as small, require government help, in the absence of which they are bound to decay sooner or later The State can lend its support in one or more of the following ways —

1. Protection against foreign competition —The government may impose duties on foreign articles or charge lower duties on home made articles

2 Financial Assistance —The State may give financial help in the form of subsidies and bounties to nascent industries

3 Research and Technical Knowledge The government may open institutions to impart technical training in different processes of industrial production and encourage research work by granting stipends and scholarships to promising and enterprising workers

4 Patronage and Publicity —The government may patronise the products of home industries by encouraging their use in all government or semi government departments The State may also organise Exhibitions and Publicity or Advertising Bureaus to popularise and bring to the knowledge of the public the various classes of goods manufactured at home

5 Miscellaneous —The government can also help home industries by providing facilities of transport and marketing of industrial products It can enable the

industrialists to purchase raw materials on reasonable terms. Through suitable legislation, it can discourage the spirit of 'cutting down rates' between different units of an industry. The State may give advice to prospective industrialists regarding opportunities, location and methods to be adopted for starting an industrial unit.

Indian Government and Decentralisation —It is agreed on all hands that Indian industries should be decentralised. This does not mean that the present mills and factories in such cities as Calcutta, Bombay, Kanpur and Ahmedabad should be stopped and removed to remote places. The policy of decentralisation has to be applied to the new industries and production units. The government must issue licences for the starting of new units in widely spread areas. In order to encourage the development of decentralised production, the government may grant various facilities as already mentioned above. Besides, the government must undertake research to find out suitable decentralised location centres, because the profit minded producers and industrialists are less likely to devote their energy in this direction.

It must be mentioned that decentralisation does not necessarily mean a lower size or scale of production. So vast is our country and so great are our potential demands that even large scale mills and factories can be decentralised.

It must also be noted that the growing markets all over the country and the availability of cheap electric power in the near future will automatically make the industrialists to start mills and factories all over the country.

A few examples of decentralised production for the U P. may be mentioned Thus, for the hand-loom weavers of Eastern U P, spinning factories should be started in that area A paper mill can be started near Allahabad In due course when scrap iron is available, an iron mill can be started in the U. P With the development of hydro-electricity, cement and glass mills should also thrive in this province.

VI

MANUFACTURING INDUSTRIES

Economic activities of man relate to means by which we obtain goods for the satisfaction of our wants Such goods are partly the result of Nature's gifts and partly the outcome of Man's skill and effort applied to work upon the raw materials, generously provided by Nature The latter process as of production is included in Manufacturing Industries Here labour is one of the most important factors

Importance of Labour —As said before, 'Labour' is the chief dominant factor in all manufacturing as well as extractive industries Unless man makes efforts, even fruits and flowers of natural growth will not satisfy human wants The importance of 'labour' has increased with the introduction of machinery in production of all kinds The significance of 'labour' is more prominent in manufacturing industries than in other industries because costly and complicated tools and machines are handled by men. Production in this case is directly related to the working ability of man This is called the 'efficiency of labour' All manufacturing industries owe their growth and development to 'Labour', the management of which occupies a very important place in modern industrial organisation The promotion of welfare and efficiency of labour is the crux of all industrial problems Its consideration needs special attention in India, where industries are still backward and the unit of production is quite insufficient to satisfy the requirements of the vast and rapidly growing population

Marage ment of Labour —The problem of management and control of labour hir ges on two points

1 Effic ency of Labour, and
2 Organisation of LaLour

The task of managemer t of laLour has tremendously increased with the introduction of machinery in pro duction We have already seen its influence upon product on, labour and marketing Problems of a very serious nature are frequently creat-d, wh ch may lead to 'deadlock' in an industry Production is thereby dislocated and confl cts between 'Labour' and Capital' become inevitable Therefore, in order to avoid any such misunderstanding between employers and employees, scientific manage-ment of the latter is quite essential In the 'effic er cy' and 'organisation' of labour, the two parties must be interested Both these problems are equally important, and we shall consider them separately in th s and the follow ing chapter

Efficiency of Labour 'Efficiency' of labour has a comparative value and mear s the working ab lity of a worker When two labourers working under similar conditions turn out dissimilar produce, we call th it labourer more efficient who produces more and better goods This ability or capacity of work is partly 'natural' in a labourer and is partly acq ired through outside help

Factors determining efficiency of Labour —The factors upon which the efficiency of labour depends can be studied under two main groups (1) Irremediable factors and (2) Remediable factors Irremediable factors are those which, by *nature*, create an instinct or willingness

in a worker for a particular occupation or line of work If he is not employed for such works, he will be less efficient But all workers cannot be thus employed. Nor can conditions of work be easily created or improved upon for all workers Remediable factors are those which are within the reach of man's effort and can be acquired with little sacrifice by outside help We shall now discuss the factors which determine the efficiency of labourers They are the following —

(1) *Racial Heritage* —Natural conditions under which a person is born and brought up have much bearing upon his efficiency of work The qualities of good workmanship are passed on from gereration to generation by people belonging to a particular nation or race

(2) *Climatic conditions* —The climate of a country exercises great influence upon the ability of a worker The hot climate of India has a retarding influence on the workers who are compelled to work for long hours and with as much efficiency as the workers show in countries of comparative cold or temperate climate

(*3*) *Education* —This is the most important factor. It determines a number of other good qualities which are essential to make the worker efficient By dint of education, a labourer is able to improve his resourcefulness, intelligence and power of imagination and observation An educated man is considered to be more reliable, honest and sincere to his duties He learns his job quickly and can adapt himself to changed circumstances or conditions of work quickly He can be entrusted with duties of the greatest responsibility and confi-

dence Technical as well as general education are both necessary to make the labourers efficient in their work

(4) *Wages* —The remuneration or reward given to labourers in return for their work is of utmost importance Better and adequately paid workers enjoy freedom from want and, therefore, take a keen interest in their work High wages are economical and low wages costly in the long run Underpaid workers are distracted from their job, and continue to think always of some other more remunerative employment This causes uncertainty of labour and so fosters inefficiency among the labourers Contented workers are an asset to employers inasmuch as they are regular and sincerely devoted to their duty High wages alone can secure educated, skilled and permanent employees

(5) *Hours of Work* —Long and continued hours of work cause undue physical exertion and mental strain, which reduce the efficiency of workers The distribution of working hours with even short intervals gives the labourers an opportunity for relaxation and to recoup their lost energy After such break, work is usually done with greater strength, vigour and stimulation than if it were to be done at a stretch for long hours Work in the latter case becomes tiresome and monotonous and thus causes a fall in worker's efficiency It kills initiative and enterprise Production tends to increase only when the hours of work are properly distributed and do not cause fatigue to the labourers

(6) *Conditions of Employment* —Congenial surroundings and improved conditions regarding space, light, sanitation

and ventilation under which work is usually done exercise healthy influence upon the efficiency of labourers Unhygienic conditions result in the loss of health of all workers Their productivity is reduced through loss of physical and mental stamina This is detrimental to the interests of both the labourers and the employers The former suffer from a reduction in wages and the latter from a reduction in the output of work Therefore, an improvement in the conditions of employment is solely the concern of employers who should realise their duty and responsibility in this respect India is far behind in respect of labour welfare More generous and sincere efforts are needed on the part of our industrialists and other employing classes

(7) *Miscellaneous* —The standard of living, moral qualities, general political conditions, hopefulness and enterprising character of the labourers also influence their efficiency of work The workers of depressed mentality can never be efficient Cordial relations between the employers and the employees tend to promote the efficiency of the latter

Methods of Remunerating Labour —Various methods have been adopted to remunerate the labourers Among these the two most important and commonly followed methods are (1) The Time wage system and (2) the Piece-wage system We may consider them one by one —

(*A*) *The Time wage system* —Under this system, the workers are paid on the basis of 'time' for which they work, *e.g* daily, weekly or monthly Its advantages and disadvantages are summarised below.

Advantages —(1) It is very simple and easily understood by all labourers

(2) The wages are regular and definite It benefits both the employer and the employee

(3) As wages are fixed for a given period of time, there is no spirit of rivalry among the workers to do more work by any means This ensures good quality of work and also a careful handling of costly and delicate machines

(4) It is the only method which can be introduced in most of the undertakings without any special arrangement for supervision and control of workers

Disadvantages —(1) It fails to distinguish between a more and a less efficient worker as both are paid equally on a time rate Under this system there is no special inducement for those who can work more and better

(2) The employers are never certain about the amount of work they may get after a given period of time and the ratio it will bear to the cost of production

It will thus be seen that this system has more advantages than disadvantages That is why the method has been in current use in a large number of undertakings and occupations

(*B*) *Piece wage System* —Under this system wages are paid in proportion to the output of work Two advantages may be mentioned (i) It distinguishes between more efficient and less efficient workers and encourages them all to work harder (ii) It establishes a direct relationship between the output and the cost of production. Against these advantages, it has the

following disadvantages (i) It cannot be introduced in a number of occupations where it is difficult to determine the unit of work for each worker (ii) It encourages a spirit of rivalry between the workers who often work overtime to earn more This results in a deterioration in the quality of work, though its quantity may increase Overwork also causes a loss in the efficiency of the worker. It often leads to the 'sweating' of labour (iii) The method is not simple and entails a great expenditure for supervision, check and 'time recording' of all workers (iv) The fixation of the piece wage rates too, is not an easy job It frequently leads to bickerings and frictions among the labourers and the employers In any factory or mill, we have to adopt that method of wage payment which is suited to the needs and conditions or work in different industries Where it is easy to fix the amount of work of each labourer, the piece rate method is more suitable, provided precautions have been taken to check its evil results In occupations where responsibility and quality of work are highly desired the time-wage system should find favour

Other Methods of Remunerating Labour —Besides these two principal methods of remunerating labourers, there are also other methods in use In the 'Progressive wages' method or 'Premium Bonus System', an extra reward is made to workers, if their work is found to be above a certain standard This payment is in addition to a minimum wage guaranteed to all labourers In this connection, the following systems need special mention

(1) *The Differential or Taylor system* :—Under this system, if the work is completed within the standard or prescribed time, the worker is paid an extra amount over the usual wage. If the work is not completed within the standard time, the worker is paid at a lower rate

(2) *Halsey System* —Under this system, a standard output is laid down, and those workers who are able to finish it earlier within a given time get the usual wage rate plus an extra reward according to the time saved Thus, if a work is finished in 4 hours instead of the scheduled time of 6 hours the worke will be paid for 4 hours (the actual time for which he works) plus for 1 hour (supposing extra reward is given for fifty per cent of the time saved) Thus the worker will be paid for 5 hours at the usual wage rate (even though he worked only for 4 hours)

(3) *Rowan System* —In this method if the work is completed within the scheduled time, the worker gets wages at the fixed rate for the number of hours he actually works plus extra reward This reward bears the same percentage to the wages earned (for actual time worked) as the time saved bears to the time for which the work has been done Thus if a worker finishes the work in (say) 6 hours instead of 8 hours and saves 2 hours he will be paid for 6 hours at the usual rate plus 25% more (for he saves 25% of the time fixed for this work)

Collective System of Wage Payment —The methods described above relate to the determination of the share of each individual worker There have also been

devised methods under which a group of labourers undertake to work on a job according to standards laid down. These are known by various names such as "Progressive Wage System", and "Task or Piece Wages System". Under the Progressive system, a group of workers is employed to do a work within a fixed time. If they accomplish more, they are given extra reward, which is divided among them in proportion to their respective merit Under the latter system if the standard work is finished within the fixed time, the workers are paid according to the agreed rate The wages are reduced if the task is not done within this time There is also a little modification of this system under which a group of workers are paid a lump sum on the basis of work done, and the amount of money is shared by the workers in that group according to their respective proportion fixed beforehand

The methods described above seek to avoid the disadvantages of the time wage and piece wage systems Their great merit is that they guarantee a higher payment to really efficient workers and prescribe a minimum of work which every worker must do within the time fixed for such work

Profit sharing and Co partnership Schemes —Certain enlightened employers allow workers to share in annual profits and also give them a hand in the management of their concern In a profit sharing scheme the workers are paid a fixed amount in advance on the pre-determined profits, in addition to usual wages, as a part of their remuneration In the case of a co partnership scheme,

the workers get a fixed share in the annual profits in addition to their usual rates. But they have to contribute such profits towards the capital of the concern. Thus, workers share in the management as share-holders or by forming a committee to share in the management of the concern. These schemes have proved of great benefit to both the parties in so far as the workers feel personally interested in the prosperity of their business and always try to contribute their utmost in increasing its output. They are less wasteful of the material and other property of the business.

It may, however, be noted in this connection that such schemes, whenever introduced, become applicable to all types of workers and their greatest co-operation and confidence are most essential. Even the slightest mistrust will defeat the whole object and ultimately result in class conflicts. There should be no compulsion for any section of the employees to join the scheme, which must be voluntary. In these schemes, the employers must be quick to foresee future difficulties that they may have to face in times of depression, or specially, where the number of labourers is quite unmanageable and disorganised.

The Problem of Minimum Wage :—A Minimum Wage is that wage-rate which is necessary to enable a worker to live decently. Under conditions of competition the value of everything is determined by its supply and demand. The labourers, whose supply is always excessive on account of the use of machinery in modern industry, are never able to get a fair return for their work. Hence the need for a "minimum wage". The fundamental object of fixing

successfully attempted in countries like Great Britain, U S.A., Australia, France, New Zealand and Canada. In India, the question was first considered by the Royal Commission on Labour which suggested an investigation before any legislation could be undertaken The Bombay Textile Labour Enquiry Committee actually recommended the fixation of wages on a sliding scale The Cawnpore Labour Enquiry Committee for the first time recommended a minimum rate of Rs 15 per month The World War II considerably worsened the labour conditions So ultimately this problem has been carefully considered and the Government of India have recently passed a Minimum Wage Act which provides also for fixing minimum wages for agricultural workers

Efficiency of Indian Labour —It is wrong to think that Indian labourers are inefficient Given the same facilities and similar conditions of employment, Indian labourers can work as efficiently as labourers in any country of the world At present, they are handicapped by several factors Low wages, lack of education, insanitary housing conditions, poor health caused by improper and inadequate nourishment, insufficient clothing and the hot climate are the chief hurdles in the way of an Indian labourer

So far nothing substantial has been done for the promotion of efficiency and real wages of labourers in India. There is a vast scope for such humanitarian work Even without increasing the nominal wages, much can be done to increase the real wages of labourers which will richly add to their efficiency In this connection the following methods are suggested —

(1) The employers may provide facilities for the education of children of their employees.

(2) Provision of facilities for free medical aid.

(3) Provision of recreational facilities like games and reading rooms within the factory premises.

(4) Immediate improvement of housing conditions. The employers may build standard houses for their own employees and the houses may be given to the workers on nominal rents so as to yield a certain amount of interest on capital invested in such houses.

(5) Reduction in and more suitable distribution of the working hours.

(6) More generous maternity benefits to female labourers.

(7) Provision of social insurance for all permanent workers.

(8) Improvement in general working conditions within the factory in respect of sanitation, ventilation, light and air.

(9) Regularity and security of employment.

(10) Use of fines or deductions, if any, for the common welfare of all labourers.

(11) Better facilities in conditions of service regarding leave rules etc.

(12) Creation of an organisation of labourers to bridge the gulf between the employer and the employees.

VII

ORGANISATION OF LABOUR

In a modern factory labourers are brought together from distant corners of the country They have their own language mode of life and aptitude The labourers are recruited mostly from rural areas They are generally uneducated and, therefore are least accustomed to discipline and rules of conduct laid down in factories They speak different and often peculiar dialects and have conflicting social practices So it is very difficult for them to appreciate the life problems of each other The freedom which they enjoy in their village life is altogether lost and they begin to feel like captives within the factory premises, where a multitude of workers are employed and all are strangers to each other Their interest in work is 'forced' rather than 'voluntary'

Importance of Organisation —Under such circumstances, the interests of employers and employees obviously appear to be somewhat antagonistic They are considered to be two parties diagonally opposed This necessitates organisation of labour in order to establish sound relations between labourers and employers and to create better understanding and mutual goodwill between them Without an organisation, the task of securing 'peace' in the industry or factory would become practically

impossible, and under disturbed conditions, industrial production can never improve The importance of organisation has increased with the introduction of machinery in production The importance of organisation of labour is indeed immense

Employers' relation to Labour —Employers can help better organisation through division of labour The works or processes of work are divided among labourers according to their efficiency Simple as well as complex division of labour are essential in order to put the right man to each task. This is desirable in order to increase production and promote efficiency of labour The formulation and application of General Rules of Conduct for labourers controlling their discipline is quite desirable Suitable rules for Service, Promotion Remuneration, Pension, and other allied subjects may be framed and enforced for all kinds of workers. This will show the employers' sincerity towards labourers A proper record of efficiency and special services of labourers may be maintained On its basis timely encouragement may be given to them by quick promotion and special increments in wages. Efficiency or service bonus will tend to promote cordial relations between employers and employees and result in complete organisation of all labourers The aim of any scheme of organisation introduced by employers should be to make a personal and direct approach to solve labour problems both from a social and economic point of view It should attempt to dispel all suspicion and distrust likely to be created in the minds of labourers The interest of both lies in successfully running the concern but this should be

explained to the labourers in periodical meetings of workers and masters. Such problems should be given full humanitarian consideration and it should be impressed upon the labourers they all swim or sink together with employers.

Relations of Employers and Employees:—Today the whole industrial atmosphere is surcharged with propaganda and party politics. Forces are constantly at work to fish in troubled waters by widening the gulf between employers and employees. The latter are freely preached to wage war against employers on excuses more than one e.g., low wages, long hours, favouritism, more and with-pay holidays or leave and demand for labour representation on management. These are some of the causes which tend to undermine unity between employers and employees. These demands are not unjust but they are engineered by those who are least interested in the cause of labour. The labour leaders do not belong to the class of labour and as such can be expected to have least real sympathy for them. They provoke labourers only in order to serve their own selfish interests to become 'leaders'. Employers and employees are like the two wheels which must go together in the same direction to move the cart of production. Both have to realise their responsibility which they owe to the society for the production of goods. The employers cannot afford to neglect the various needs of their employees for the satisfaction of which the latter look reasonably to them. The high or low standard of living in which the workers may be placed ultimately reflects and recoils upon the employers. In their own

interests, the employers should see that the employees are better fed, clothed, housed and provided with reasonable amenities of life Then the labourers shall feel pride in serving under them. The employees in return should cast off all malice or ill-will that they generally bear towards their masters. Maximum production should be their aim, strict discipline their way and goodwill their mission in the discharge of their duty or service which they are socially and morally bound to do. Conciliation, and not agitation ought to be their way for achieving objects. The relations between employers and employees are desired to be complementary rather than competitive Thereby both stand to benefit.

Industrial Disputes—Their Causes —In the absence of sound relations, disputes between employers and employees are inevitable. Among the various causes of industrial disputes, the following may be noted —

1. Demand for increase in wages either on the plea of prosperity in the industry or on account of a rise in the cost of living.

2. Demand for reduction in the hours of work, and increase in holidays.

3 Demand for increase in over time allowance.

4. Demand for the dismissal of worker for the reinstatement of any dismissed workers.

5. Demand for greater facilities in leave rules

6. Demand for representation of labour on management.

7 Demand for the recognition of a trade union.

8. Desire of the workers to share in the profits of industry or to be provided with greater facilities of welfare in and outside the factory.

9 Sympathy for strikers in other concerns

10. Political causes leading to general agitation or discontentment

Strikes and Lock-outs —Any one or more of the above factors lead to strikes or lock outs A strike denotes stoppage of work by the workers themselves A lock out is declared by the employers in order to check workers from entering the factory premises In either case industrial production suffers There is loss of working days and as 'Labour' is a perishable commodity, there is loss of wages too It causes hardship to workers and if the situation is not saved from taking an ugly turn, it results in demoralisation and even criminal offences. Strikes do more harm than good, when the ground for them is not strongly prepared and therefore, have to be given up without achieving their objects They weaken the position of labourers and also give rise to bitterness between them and their masters Partial strikes too, are harmful because they expose the disunity among labourers and encourage jealousy or rivalry between different groups or workers Strikes cannot be successful unless they enlist public support and sympathy Sit-down strikes are also coming into prominence in certain callings In this case, the workers come to their duty but actually do nothing and sit idle This entails risks of all kinds for the factory property So-

the employers should take adequate precautions for any such emergency. Lock outs should be declared rarely and only when it is unavoidable or deemed necessary for the protection of factory property or when a strike is anticipated to run long At the same time care should be taken not to provoke in any way the workers lest they might embark upon gaining entry in the factory by force Strikes and lock outs should not be frequent, otherwise they lose their value

Industrial Disputes in India —As in other countries, in India also, the number and intensity of industrial disputes have grown with industrial development, political awakening and gradual deterioration in the economic position of industrial workers During the war period disputes reached their climax The Government were aware of the disadvantages of these disputes from the national point of view and accordingly the Trade Disputes Act was passed in 1929. It was subsequently amended in 1938 This Act makes provision for appointing a Court of Enquiry and Boards of Conciliation at the request of both the parties It prescribes penalties for strikes and lock outs in public utility concerns unless previous notice has been given It further makes the strikes illegal if they cause hardship upon the community or if they are considered undesirable otherwise During the World War II, Rule 81—A of the Defence of India Rules sought to prevent strikes and lock outs The Essential Services (Maintenance) Ordinance, 1941, prohibited persons from leaving certain occupations Although these war time measures have been given up, it seems that they would

have helped us to escape the present crisis if we had retained them for some time more However, the Bombay Industrial Disputes Act, 1938, is the most important piece of legislation It seeks to make all strikes and lock outs illegal until such time as the procedure laid down in the Act for settlement is exhausted It makes provision for an Industrial Court Since its amendment in 1941, it provided for compulsory arbitration in certain disputes It lays down procedure for the representation of employees through trade unions

Trade Unions—Their Organization and Functions —A Trade Union is an association or organisation of workers formed in order to provide a common meeting ground for all with a view to effect improvements in the conditions of their life and labour It is a mistake to think that trade unions foster industrial strife or create class hatred This happens only when a trade union is organised and dominated by non labouring classes, who are decidedly self seekers A trade union formed on right lines aims at performing the following functions —

(1) To improve socio economic conditions of the workers

(2) To meet frequently to exchange views and to devise means to achieve the above object

(3) To establish, promote and strengthen mutual relations between workers and the employers

(4) To help, organise and create a common and united front of workers without any distinction of caste, colour or creed

(5) To secure by all legitimate means a fair return for their labour

(6) To adopt all lawful methods in order to achieve its objects.

Thus it will be seen that trade unions have a great educative value and they are necessary for securing peace in an industry or locality

Trade Union Movement in India —Like our industrial development, the trade union movement is not very old in India Among the oldest unions, mention may be made of the Bombay Mill hands Association of 1890, the Amalgamated Society of Railway Servants of India and Burma of 1897, the Printers, Union of Calcutta of 1905, the Bombay Postal Union of 1907 and the Kamgar Hitbardhak Sabha, Bombay, of 1910 In the real sense of the term, the trade union movement started only after the Great War of 1914 18, when within a period of only four years scores of societies were started all over the country. In 1920, the All India Trade Union Congress was formed In 1922, there were formed the Central Labour Board, Bombay, the Bengal Trades Union Federation and the All India Railway men's Federation The following years gave birth to Central and Provincial Federations of Unions of Postal and Telegraph Employees The Trade Union Act was passed in 1926 after which there was a rapid increase in the number of trade unions After 1931, delegates were also sent to the International Labour Conference At present the supreme body is the Trade Union Congress Besides there exist several other labour organisations like the Mazdoor Sangh and the Trade Union Federation.

Despite all this progress, it is true that the growth of Trade Union movement in India has not been

promising. It is due to the following drawbacks in the movement :—

1. Absence of true and efficient leadership
2. Illiteracy and migratory character of labourers.
3. General apathetic attitude of employers towards trade unions and their workers.
4 Workers inability to contribute handsomely towards the Union funds on account of low wages earned by them

State and Labour —The State has been quite alive to recognise the importance of labour in the industrial field and it has accordingly passed suitable legislation from time to time for protecting the interests of the workers. In this connection, the Factory Acts and the Workmen's Compensation Act are more important and so we may describe them here.

Factory Acts —The Factory Act of 1881, which was applicable to factories using power and employing more than one hundred workers, fixed the working hours for children between 7 and 12 years of age at 9 hours per day with one hour's daily rest and four days holiday in a month In 1891, the Act was extended to factories employing 50 persons. The age of children was limited between 9 and 14 years and their daily hours of work were reduced from 9 to 7 The hours of work for women were fixed at 11 per day Both woman and children were prohibited from night-work. The Act of 1911, fixed the hours of work for men at 12 per day and further reduced the hours of work for children from 7 to 6 in textile factories. In 1922, another act was

passed It extended to all factories employing at least 20 persons It sought to make the hours of work uniform for all adult workers and fixed them at 11 per day and 60 per week The age of children was now fixed between 12 and 15 years It also attempted to protect the health and safety of workers and provided for more strict inspection of factories in matters of working conditions Another improvement was made in 1934 The working hours for adults were reduced from 60 to 54 per week and 10 hours per day Provision was also made for a weekly holiday and rest hours Children between 12 and 15 years of age were now to work for not more than 5 hours a day This act also makes provisions for *spread over* (*limitation of* the period of consecutive hours) artificial cooling and humidification labour welfare overtime certificate of fitness for children and security of factory structures An amendment was made in 1940 and the provisions of the previous Act relating to child labour became applicable to power factories employing at least 10 persons including children Further amendment was made in 1944 to control the conditions of work during the war period only Legislation on similar lines has also been made for Transport and Mining industries The Factory Acts are being consolidated by the Government of India to secure uniformity of legislation

Workmen's Compensation and other Acts — An Act to give compensation to workers was passed in 1923 The award of compensation was made obligatory on all employers when personal injury is caused by an accident arising out of and in the course of employment The

amount of compensation depends upon the earnings of of the worker and the nature of disablement or injury caused to him.

In the case of a workman whose monthly wages are not more than Rs 10/-, the compensation for death, permanent total disablement and temporary disablement is Rs 500/-, Rs. 700/- and half the monthly wages respectively. For workers whose monthly wages are between Rs. 50/- and 60/-, the corresponding rates of compensation are Rs 1800/-, Rs. 2520/- and Rs. 15/- per month. For workers earning above Rs 200/- per month, the corresponding amounts are Rs. 4000/-, 5600/- and Rs. 30/- per month In case of minors, the rates of compensation on the same basis are Rs 200/-, 1200/- and half the monthly wages.

The Payment of wages Act is another piece of important labour legislation. It makes wide provision for the time of wage payment, wage period, fines and deductions Legislative provision has also been made for giving Maternity Benefits to women in different provinces. Such *Maternity Benefit Acts* now obtain in practically all major provinces like Bombay, Madras, U P, Bengal, Assam, C. P., Delhi and Punjab

Labour Welfare —Labour welfare is humanitarian work undertaken for the improvement of labourers' life and work. But it is not charity. The schemes for labour welfare include, *inter alia*, the provision of sanitary working conditions, cleanliness and proper arrangements for air and light within the factory, facilites for bath wash and toilet, education of workers and their dependente, facilities for medical aid and entertainments

like games, sports, cinema and refreshment, inculcation of habits of thrift among the workers, and general improvements in the social life of labourers.

In India, the need for such measures is immense. Industrial labourers in this country fall much short of the standard of living attained and enjoyed by their counterparts in other industrially advanced countries of the world. The task of securing Industrial Peace and maximum production, will be greatly facilitated by the introduction and application of such schemes They give benefit to all labourers, employers and the society at large, including the State and therefore all should make a common cause by cont ibuting their might in the achievement of this tremendous, though necessary task of industrial labour welfare.

VIII

The Coal Industry

Coal is one of the basic materials for the economic development of a country. Without coal we shall not have our iron and steel industry. Our railways cannot move. The dye and drug industries occupy an important place in the economy of all progressive countries. Coal and its derivatives are the basic starting materials for these industries. Without coal the housewives would miss the soft coke and we would miss the chance of manufacturing synthetic motor fuel from coal to replace petroleum. It was correctly said : "Coal was prized as an ally in war and guarded as a treasure in peace It became a household wood for comfort when the sun shines, as well as warmth for the winter days. It resolves itself into the sheen of silks, fragrance of flowers and flavour of fruits. It gives all the colours in the artist's palette and is moulded into useful plastic beauty." As a producer of this important product India ranked ninth among the coal producing countries of the world in 1945, although it has about 1/5 of the world coal area.

History

The history of the Indian coal industry may be studied since 1774 when 100 tons of coal were first raised at Sitarampur. Although different coal mines were slowly started, the industry made a slow progress till the middle of the last century because of low domestic con-

sumption and the absence of the railways which are still the biggest users of Indian coal. Due to the development of the railways, the production of coal increased and by the end of the century it was solely used in eastern India and Burma Due to high railway rates, the western parts still found it cheaper to import coal Our average yearly production was about 42 lakh tons and our imports about 8 lakh tons By 1914 the production had increased four-fold to about 165 lakh tons, of which 30% was consumed by the railways.

By the end of the Great War, the coal production had increased to 225 lakh tons (1919), though our exports had decreased The continued high demand and shortage of labourers led in 1920 21 to the use of machines and electricity in the mining operations Yet it was not until 1928 that the production reached the 1919 figure. During 1930 34 the production decreased on account of the economic depression After 1935 it increased and was about 278 lakh tons in 1939

During the Word War II coal production showed a decline In 1943 44 only 225 lakh tons of coal were produced. Since then the production has increased and it is returning to the pre war level. In 1945 46 it was 265 lakh tons and in 1946 47 (April March) it was 262 lakh tons The number of collieries is about 200 and it employs about two and a quarter lakh workers

Exports and Imports

Until recently the emphasis has been on greater exports of coal In 1894 we had exported about 54000 tons but the imports amounted to more than 8 lakh tons The situation changed with the turn of the century-

In 1901, we exported 20 lakh tons of coal and imported only 2·5 lakh tons. Since then, our exports have been more than imports. During the Great War when there was a scarcity of coal-supplies in India, the public had successfully agitated for the stoppage of all exports. The Government of India had therefore banned the export in 1920. After 1921 we again felt that our foreign markets were passing into the hands of the African coal-producers. In 1923 on account of public agitation the Government removed the ban. The Coal Committee of 1925 advised that to capture the foreign coal markets the railway rates must be reduced and the better quality be exported. Between 1924-26 the East Indian and the Bengal Nagpur railways reduced the railway rates by 37½%. In 1925 the Coal Grading Act was passed, and a Board was established to issue certificates of quality for the coal to be exported. As a result, the exports increased till 1930, decreased during the economic depression increased again afterwards. In 1939 we exported about 26 lakh tons of coal. Some coal was imported but it was only about one sixth of the exports by value. During the World War II the exports and imports decreased till 1945. In 1946-47, however, the exports came to be about 5 lakh tons and the imports to about 10000 tons only. It has only recently been realised that even without exports there will be demand enough for all the coal produced in the country.

The Indian Coalfields Committee recommended that the emphasis placed on the coal export trade in the past has no longer any validity and that exports may normally be permitted only to Burma, Ceylon and the Straits

Settlements But they did lay stress on the encouragement and development of the coastwise trade in coal

Localisation

The coal industry is mainly localised in Bengal, Bihar, C P and Hyderabad[1] During 1925 37 there was a decline in the percentage of coal miners in Assam, Bihar and Hyderabad and an increase in the case of collieries in the Indian States, Bengal and C P. Yet the fact remains that four fifth of the industry is located in Bengal and Bihar. This high concentration has been a handicap in the industrial development of the other parts of the country. During recent years and in further, with the *development of hydro electricity, the influence of the coal* industry shall decrease

Size of Industrial Units

The location of the coal mines and the quality of the coal influence the size of a coal company. The other factors that count are the distribution of the surface property rights, the available markets and the capital of the mining concerns It is true that the first two decades of this century saw a large increase in the number of small mines as also in the percentage of the total coal produced by them Since 1920, however, the small mines

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1. The percentage distribution of coal workers has been as follows in some of the important regions of location —

	Bengal	Bihar	C.P.	Assam	Hyderabad	Other States.
1925	22 8	60·5	4 8	2 2	6 7	2·2
1937	26 2	53 2	6 1	1 1	6·3	5 6

are declining[2] in number and production In 1940, some three dozen big mines produced about two fifth of the total coal output Three sizes seem to be more frequent viz, collieries producing annually (i) 25 50 thousand tons (ii) 1 1 5 lakh tons and (iii) over 2 lakh tons of coal.

Though the number of small mines has decreased, still it seems to be sufficiently high Their number increased further during the last War when many small mines, which had been closed were opened again Yet the distribution of our coal mines compares well[3] with that of coal mines in U S A except that U S.A has a larger percentage of the biggest coal companies

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2 Below are given the statistics for distribution of coal mines by size and the total percentage production for each size —

Output per colliery (In thousand tons)	1920		1930		1940		1942	
	No of mines (a)	Total output (%) (b)	(a)	(b)	(a)	(b)	(a)	(b)
0–5	248	2 9	176	1 3	176	0 9	255	1 2
5–10	127	5 0	50	1 5	61	1 5	82	1 9
10–25	1_7	11 9	107	7 6	100	5 9	124	7 6
25–50	93	18 9	80	13 4	93	10 9	125	14 9
50–75	25	8 3	42	10 8	41	8 5	38	8 3
75–100	32	15 1	24	8 8	24	7 4	24	7 0
100–150	18	12 0	28	14 2	34	13 9	43	13 4
150–200	7	6 6	11	8 2	14	8·1	13	7 8
Above 200	10	20 2	20	34 4	34	42 8	30	37 9

3 The percentage distribution of collieries with different output in India and U.S A is given below —

Output per mine (In lakh tons)	0–1	1–5	·5–1	1–2	over 2	
India – 1940	41 0	33 5	11 3	8 3	5 9	100
1942	46 5	34 4	8 6	6 3	4 2	100
U S A –1 44	46 4	25 7	7 8	8 1	12 0	100

Strictly speaking, the output of a mine does not indicate its efficiency. A mine with a small annual output may be a small mine with reasonable efficiency, a new mine not yet producing at full strength or an old mine getting exhausted. Highly profitable mines may exist in every size-group. Yet on the whole, it is true that the bigger mines enjoy greater economies in power, supplies, repairs, transport, skilled workers etc. The increase in the number of mines during the World War II has led to a lower efficiency in the industry. This is more due to leasing and sub-leasing of portions of mines. It is satisfactory to mention that the Central Government is taking steps to remedy the situation.

Mechanisation

Although the number of coal-mines working with hand-labour has decreased substantially and most of them are using steam power, the coal industry cannot be said to have been mechanised[4] The reasons are mainly (1) transport facility to carry the mechanical output does not exist (2) at certain times in the year due to a greater supply of labour pick-mining is cheaper (3) old mines with pillar-supports are not suitable for the use of machines and (4) there is a lack of adequate electric-supply and

(4) Between 1919 and 1935, the distribution of collieries in Raniganj and Jahria together was as follows:

Means of extraction	1919 No. of mines	1919 Output (000's tons)	1935 No. of mines	1935 Output (000's tons)
Hand labour	251	1462	76	275
Steam-power	325	15945	285	12935
Electric machines	11	1340	24	3384

trained labour to work the machines[5]. The Indian Coalfields Committee was in favour of the mechanisation of the industry and had recommended the removal of the above difficulties

Capital

The paid up capital of companies engaged in coal-mining has increased as shown by the figures given below

Year	1914	1925	1931	1942
Paid up capital (Rs. crores)	6 7	11 8	9 1	9 8

Capital had been withdrawn after 1925 because of losses caused by a depression of world price and some internal causes It increased slowly after 1931 due to the effects of the economic depression. About a dozen companies, which acquired mining rights early and at low prices, have continuosly paid high dividends varying from 17 to 70 per cent There are, however, hundreds of small collieries which are unde financed or of an uneconomic size. These have distributed little profits It is desirable that after an investigation the smaller fries should be made to amalgamate At the same time it is necessary that collieries should have more discounting and banking facilities Also, the newly created Industrial Finance Corporation should finance the industry

State Control

Of late, the capitalists have been perturbed by the

(5) Another obstacle to mechanisation is sometimes thought to be the greater inclination of the seams For the same rea on the British coal mines are less mechanised than the American mines That argument cannot be accepted. In Ruhr (Europe), inspite of worse seam conditions 85% of coal was cut by machines in 1928 compared to 38% in Britain in 1931.

declaration that the government should acquire proprietory rights in mineral bearing lands, coal fields included But the State has not decided to nationalise the coal industry Its declared industrial policy is to control and regulate it, and nobody would dispute the necessity for such a measure Of late, the State has fixed coal prices, has the major say over the wage rates and dictated the destination of every ton of coal raised The colliery-owners have not resented this interference, but it is not desirable that provincial governments like the Bihar Government should be allowed to levy a sales tax on coal.

Incidentally, the Government of India is soon to adopt a uniform mineral policy So far as the coal industry is concerned, *the Indian Coalfields Committee had recommended* the establishment of an autonomous organisation for acquiring the proprietory rights So far as control is concerned, the Ministry of Works, Mines and Power already has a draft legislation, wherein the controls mainly relate to the following objectives :—

(1) Fixing minimum and maximum rates of dead rent and royalty.

(2) Limiting the areas of individual concessions and the maximum areas to be held by one concessionaire

(3) Laying down minimum and maximum periods of lease

(4) Securing amalgamation of neighbouring leases

(5) Application of improved mining methods to ensure conservation of mineral assets

(6) Exercising a control over exports, and

(7) Collection and compilation of statistical returns on an all India basis.

Labour

However, the coal industry does not have a settled labour force Nearly four fifth of the labour is recruited from outside The supply of labour increases during February to May when there is practically no work in the villages The labour is migratory in character not only because of the attachment to the villages but also because of the method of recruitment, working conditions and wages The Bihar Labour Enquiry Committee had recommended that (1) the contract system be abolished, (2) 15 days' leave with wages be granted for every 30 days of work, (3) ad quate and fully medical arrangement should be made and (4) wage rates must ensure a minimum monthly earning of Rs 20 to every labourer Most of these recommendations have since been carried out In January, 1948 the Tripartite Industrial Committee on coal mining agreed to a 48 hours week for the coal miners and to a comprehensive provi ion being made in the Indian Mines Act for safety, health and decent working conditions, particularly with regard to improved water supply, sanitary conveniences, medical arrangements both below and above the ground and free inspection rights to a welfare commissioner

Instead of making prices determine wages, the tendency now is to let wages determine prices Man must have his basic needs He must have a minimum wage His wages should not discourage him rather it should make him produce more These considerations are being applied to many an Indian industry In the

coal industry, the number of workers has increased rapidly Between 1938 1947 the average daily number of workers has risen from 2 01 lakhs to 3 22 lakhs It is regretted that simultaneously the quantity of coal cut per coal employe has decreased from 177 tons in 1939 to 141 in 1945 This tendency is found all over India Yet a minimum wage legislation has been passed by the Government of India Thanks, to the Conciliation Board, already within the last two years wages have been sufficiently increased A provident fund scheme has been introduced for workers getting upto a basic pay of Rs 300/ per month on an industry wise basis. The worker contributes one anna per rupee and the employer adds an equal amount Also, there are "Food Administrations' and 'colliery shops" to supply rice, wheat, dal and cloth some of these are sold at fixed concession rates Besides there are the welfare and health schemes and the Government of India is at first constructing houses for the coal workers [6]

Even then the labourers have shown irresponsibility, inefficiency and a tendency to go slow The fault lies in their ignorance and in the interested parties which do

(6) Under The Coal Mines Labour Welfare Fund instituted in 1944 regional hospitals and maternity and child welfare centres have been opened at Tisra, Katras Chora and Sijarsole The anti malaria activities have led to a reduction in the incidence of malaria Three T B Clinics are to be constructed at a cost of Rs 6 lakhs An X ray equipment and a refresher course for colleries doctors are also being financed Besides, under the Supervision of the Fund two townships at Moharida (900 houses) and Bhuli (2500 houses) are planned 750 houses are already being constructed There is another scheme under the above Fund, to construct 50000 houses 21000 of these may be on land owned by the collieries. 15 sites have been selected in the Raniganj coal field and each would contain 500 houses In addition 5300 houses would be on railway collieries

not—cannot—act as true labour leaders The Government of India is fully aware of the situation. It has already declared the coal industry a public utility service. Some degree of strictness is essential because it is of the utmost importance that the coal output per worker *must increase The workers must now rise to the* occasion and play their due role.

Conservation of Coal

Nevertheless, it is true that the transport difficulty shall be an important problem for the coal industry. *Therefore, from the long period point of view,* it is worth considering, how much coal should be produced—*how much of each variety. This is an important* question even from considerations of conservation of this valuable black diamond.

There are five important varieties of coal, (1) metallurgical coal, (2) High grade steam coal, (3) Low grade steam coal, (4) Tertiary coal and (5) Lignite coal The last variety is unimportant The tertiary coal is found in Assam and contains sulphur It cannot be of commercial use unless a method of desulphurising it could be found We have an unlimited reserve of the low grade coal, 3335 million tons of the second variety and about 700-750 million tons of the metallurgical coal [7]

It has been a common knowledge for years together that we are wasting our metallurgical coal. If we continue to produce and consume it as we have

(7) Vide the Report of the Indian Coalfields Committee, 1946, Chapter II

done all these years it would be gone within 65 120 years, provided certain blending and washing processes are adopted for certain kinds of metallurgical coal. It has therefore been asserted that its use be restricted to the iron and steel industry and the coke ovens But the railways still use it and the Government is also less wisely thinking of not placing any restriction for fear of upsetting the present production [8]

Similarly the high grade coal which is highly volatile, should be conserved for the chemical industry and not frittered away for steam raising as at present As regards, the high grade coal of low volatility, foreign countries are subjecting it to distillation and producing over 20,000 products, which are far more valuable than the coal All that our Government has done so far is to establish the Fuel Research Institute at Digwadih Meanwhile that coal is being burnt to produce steam and heat while it should be so used only after distillation [9]

The low grade coal is a big problem It contains a large percentage of ash and therefore the businessmen do not want to use it A substantial percentage of the accumulating stock at the pit heads consists of the low grade coal It does not pay to transport it But a good way would be to start distillaries and convert the low grade coal into soft coke for domestic use

(8) Vide "The Coal Industry in the Leader, Deepawali Number, 1948

(9) Before the war we imported coal distillation products of the value of Rs. 7 crores while the establishment of a factory costing about Rs 2 crores would save that money A factory to manufacture Benzene and Toluene from coal was once being planned at Tata Nagar

Synthetic oil[10] and synthetic gas can be produced out of it. The Czechoslovakian Technical Mission drew the attention of the Government to its use in the form of powdered coal in the boilers. In this way, even coal with 55% ash has been used in special large size boiler units in Czechoslovakia. The production of low grade coal means greater employment of labour and therefore it has been recently advocated that more transport facility be given for such coal. The supply of superior grades of coal to mills should be compulsorily replaced by that of low grade coal. If necessary, the ash content may be reduced by undertaking on a commerical scale the "washing" and "beneficiation" operations[11] It shall be better if the railways themselves start to use the low grade coal. The Central Government has signed an agreement with the Koppers Company of the U S A for a 'project study' for the production of synthetic oil. This is not enough. Besides, a factory is being erected at Sindhri (Bihar) to use coal-power to produce fertilizers, electricity etc.

It must also be mentioned that the figures of reserves that have been mentioned above are true for a depth of 2,000 feet. We can mine deeper provided the

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10. In 1940-41 it was estimated by Dr V. S. Dubey of the Banaras Hindu University that even if coal may cost Rs. 4 per ton, the cost of production of synthetic oil will be about 4 5 annas per gallon, that is, far less than the price of petrol.

11. *Vide* 'India's Reserves of Coal and River sand' published in the quarterly periodical *Indian Minerals*, Vol. I, No 2 In 1936 it was estimated that for the lower Paniguni coalfields 930 million tons of sand are available in the rivers Damodar, Adjai and Barakar—sufficient to last 100 years For the Jharia and Giridih coalfields, the neighbouring supplies of sand and alluvium soil was estimated to be insufficient to last a decade or two.

coal there shall not be burnt Of course deeper mining shall mean higher cost of extraction, greater wastage during extraction and the danger of water seeping in But there are no proofs that at greater depth the general rise in temperature shall mean greater burning for coal Even Dr. Fox, who is famous for his estimates of coal reserves, does not say so So the Indian Coal fields Committee recommended that the reserves be estimated for the depth between 2,000 and 5,000 feet Particularly in the Jharia Raniguni and the Bokaro fields, we are very likely to get metallurgical coal It shall be economical to mine it even at treble the present cost for on it rests the fate of our iron and steel industry

Sand stowing

If we want to mine deeper and deeper, we must fill the voids to escape collapse, floods and fires River sand is the best stowing material but there can be other possible stowing materials such as shales There are no accurate data[12] about the quantities of sand brought down annually by the Damodar and other rivers, nor of the other materials, which, though costly, shall have to be used in other areas On the present information sand supplies shall last the lower Raniguni fields for 100 years For other fields there are very insufficient supplies and the construction of the dams would further affect the annual accumulations Full

12. The Council of Scientific and Industrial Research has already undertaken research about these operations successfully Such researches should be further encouraged The washing of coal would really make coal with even 25% ash suitable for metallurgical and chemical processes

information about the stowing materials must be known when planning a long term policy for the coal industry

The problem of sand stowing really began to receive some serious attention of the Government of India since 1937 when a Sand Stowing Board with a Sand Stowing Fund was created to subsidize the operation by the collieries For some time help was given more to those collieries which undertook the stowing operations themselves Now, although there is ample money in the Funds, the Government have not yet carried out the recommendation of the Indian Coalfields Committee that subsidy be granted up to 75% of the total cost of stowing, subject to a maximum of Rs. 2 per ton of coal produced. However, the Board should encourage collieries using better methods and more economical ways of stowing In any case, sand stowing should be made compulsory

Transport

Transport was not one of the important problems of the coal industry before the last War. Only there used to be a greater demand for wagons during the period November to March As this demand could not be met, in 1940 the Railway Board had decided to raise the charges by 5% during that period and to abolish it during the period April to November This was calculated to shift the demand to the latter period.

From the long period point of view, the Indian Coal fields Committee had put the target for coal production at 42 million tons and there should be transport facility to carry that load. In that connection it recommended

the laying of alternative lines[13], overhauling of the E I R etc The Indian railways are taking necessary action now.

But in the short period, the transport situation deteriorated since 1946[14] First there was a wagon shortage Then in 1947 many thousands of railway Muslim employees including those working in workshops opted for Pakistan The shortage and difficulties created by the partition of the country were brought under control by November 1947[15] Yet, curiously enough more and more coal stocks have accumulated at the pit heads up to about 5 million tons The wagon shortage is

13 The committee had recommended the quadrupling of the line between Dhanbad and Asansol Though this has not yet been done, it is gratifying to note that 200 miles of new lines are being laid and another 700 miles of lines will be laid within the next ten years It is also proposed to overhaul the yards at Lucknow, Cawnpore and Tundla. It may help to improve the supply of coal to the U P.

14 The figures for raisings, despatches and balance of coal since 1946 are as follows

	Quantity raised	(In million tons) Despatched	Balance
June December, 1945	16 2	14 8	1 4
Jan June, 1946	15 3	13 4	1 9
June-December, 1946	13 9	12 6	1 3
Jan June, 1947	15 6	12 9	2 7
June December, 1947	12·8	10 5	2 3
Jan -June, 1948	13 8	11	2 8
July, 1948	1 96	1 85	0 11
August, 1948	1 97	1 82	0 15
September 1948	2 37	1 89	0 48

15 Below are the figures of the nnmbe (in thousand) of coal filled wagons despatched monthly since August, 1947

1947	No of wagons	1948	No of wagons
August	97	January	101
September	89	February	99
October	88	March	103
November	97	April	102
December	102		

felt more on the E.I.R. It particularly affects collieries having modern equipments but no stocking space and those producing the low grade coal. Partly, it is due to lack of repair and overhaul[17] and the lower speed of goods trains[18], and partly, it is due to the use of the wagons by the business men as godowns and warehouses.

The railways are trying to increase their administrative efficiency[18]. The demurrage charges have been increased. It has been allowed to load 22 tons of coal instead of the

16. In March, 1948, the Chief Operating Superintendent, E. I. R., disclosed that

(1) Workshops are turning out wagons at less than half of their previous rate.

(2) Six thousand wagons are constantly lying idle for want of repairs and overhaul. Two hundred and fifty U. S. A. locomotives would soon have the same fate.

(3) While 1912 wagons accumulate for repair, the delivery does not exceed 1300 wagons.

17. The speed of goods train has been reduced as follows :—

	Speed in mile per hour on Broad Gauge	Metre Gauge
1933 34	11 7	11 0
1940-41	11.1	10 9
1946-47	10 3	9,72

The average period of turnround for wagons was 9 5 days in 1938 39. It increased to 14.5 days in 1946 47 In 1947 48 while it is 9 5 days on the G I P. Railway, it is 17 4 days on the E I Railway. It means that the efficiency of the wagons is about 2/3 of what it was pre war. If that efficiency be again achieved, it should be possible to carry 50% more coal than we do now Discounting it for the low speed, it should be possible to increase the quantity transported by about 39%

18 It must be noted that during the last three years, the coal industry has been using an increasing percentage of all the wagons in use, as is clearly shown by the following figures —

	No of wagons loaded Coal and coke (1)		All (2)		Percentage of (1) to (2)
1945 46	11 6	Lakhs	75 2	Lakhs	15 4
1946-47	11.3	,,	63 5	,,	16 5
1947 48	10 3	,,	47 2	,,	21 8
1948 49 (estimate)	14.0	,,	62 8	,,	22 3

usual 21 tons in each wagon Coal is being dumped at ports to be sent by sea. A scheme for the zoning of coal movements is under way Besides, they must send all coal destined for Pakistan by sea Since B N R has rather a surplus of wagons, a portion of the E I. R should be placed under the operation of the former. Bulk supplies of coal may be made compulsorily in order to secure through movement of wagons and goods trains There has been an over allotment of wagons to certain collieries, particularly those belonging to the railways This means a wastage of wagon capacity and must be immediately cut down. If these inefficiencies are reduced it should be possible for the pre ent wagons to enable us to carry 39% more coal than at present At the same time we know that with the present arrangement the collieries can easily produce another 5 million tons of coal. Greater transport efficiency shall make it possible to exploit this production capacity also In order to hasten and increase the consumption of low grade coal a definite portion of the wagons should be allotted to low grade collieries

Consumption

There is a Coal Transport Advisory Committee to help rationalise and resolve the transport shortage But the shortage is likely to remain for some time due to inevitable bottlenecks It is, therefore, desirable that the consumption of coal should be altered and adjusted One way shall be to modify the targets fixed for the various industries so that their coal requirements shall be within the supplies made

In this connection, it must be mentioned that the increase in production has not kept pace with the increased supplies of coal to the industries It holds good in the case of most of the important Indian industries.[19] It is of the utmost importance that the implied inefficiency in the use of the coal supplies be eliminated

Both in the U S A and the U K , and particularly in the U.K , there are Fuel Research Boards and stations which are constantly trying to find more economical methods of using coal Their researches concern the use of coal not only in mills, railways and ships but also in the kitchen and the fireplace It is high time that we also made a rapid move in this direction

For domestic consumption, the Indian Coalfields Committee recommended greater use of soft coke At present 1 3 million tons of coal are converted into soft coke The committee wanted the figures to be increased to 3 million tons within ten years It remarked that soft coke gives out less smoke and more heat The onus of necessary publicity was placed on the Government But let it be

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19 The conclusion is clearly borne out by the following statistics —

	Coal supplies (in million tons)			*Production (in million tons)*		
Industry	*1944 45*	*1947 48*	*Percentage Change*	*1944 45*	*1947 48*	*Percentage Change*
Iron and steel	2 69	3 20	+18	4 5	4 0	—12
Cement	0 76	0 79	+50	2 0	1 6	—20
Jute	0 43	0 69	+63	1 1	1 0	— 9
Paper	0 38	0 42	+10	0 1	0 07	—29
Chemicals	0 10	0 13	+33	1 6	1 2	—24
Textiles	1 72	1 96	+14			
Yarn				0 74	1	+33
Cloth (in crore yards)				473	374	—21

remarked that it takes longer to light the soft coke. It requires a special type of oven. It corrodes the utensils more and it is difficult to reduce and regulate the heat. But these factors cannot withstand a whirlwind of world forces and the monetary economy of the soft coke for long.

IX

THE IRON AND STEEL INDUSTRY

Iron and steel constitute the frame-work on which the industrial structure of a country is built Undoubtedly in ancient times we were experts in the art and science of this industry. The rustless pillar of Samrat Ashok near the Kutab Minar is an adequate testimony One may also mention the South Indian villages of Nirmal and Indoor which supplied swords, daggers and spears to the whole of India It was Indian iron which was used to manufacture the swords of Damishk, which were known as Shamsheer i Hind But today our future progress depends to a large extent on the production of iron and steel The greater their production the greater the development of the machinery, tools and implements for industry, which is basic to the economic development of the country

History

We owe our present iron and steel industry to Syt Jamshed Tata, who started the production by modern methods in 1912 The World War I came as a boon to the industry Imports were greatly reduced and the internal prices shot up *Tisco* Limited[1] was the only concern which could make supplies The tremendous war time demands for steel led to a rapid progress of the industry. After the war, the rise in imports, the fall in prices

1 Tata Iron and Steel Company Limited

and the foreign competition affected the industry adversely The annual profits of Tisco were only Rs. 1,22,000 in 1922 23 as compared to Rs 1,15 31,000 in 1919 20, and no dividend was distributed by the company.

The Government of India was asked to extend protection to the industry on grounds of the services rendered during the war and the advantages enjoyed by the industry in respect of raw materials, labour and markets The case was examined by the first Tariff Board of India in 1923 and upon its recommendation, by the Steel Industry (Protection) Act of 1924, the Government of India decided to levy a tax on the imported steel and wrought iron products at rates varying from Rs 14 to Rs 45 per ton, and also granted a bounty (*i e*, financial help proportional to production) on the manufacture of medium and heavy rails and fishplates (which are required by the railways) for a period of three years In 1927 another Tariff Board enquiry was held

On account of the subsequent and undue fall[2] in the price of the imported steel, Tariff Board enquiries had to be made in 1924, as well as in 1925 Every time more protection was granted *i e*, the tax on imports was increased The bounty was also made general from September 1925 it was at Rs 12 per ton on 70% of the quantity of steel ingot production subject to a maximum of Rs 60 lakhs The protection was to be reviewed in 1927 It was again extended in a modified form till 1934

2 It was due to (*i*) a depression in the European steel industry, (*ii*) depression of the continental Exchanges and to (*iii*) a rise in the value of the rupee above 1*s* 4*d*

In 1933, another Tariff Board examined the case for protection. It found that on account of a number of causes[3] the industry had not made the expected progress It recommended modified rates of protection By the Iron and Steel Duties Act, 1934[4] the protective duty was levied at the recommended rates plus Rs 4 per ton Simultaneously, instead of a bounty an excise duty (i e a tax) was levied on the steel ingots produced by the Indian companies. The Tisco declared that before long it would be able to stand in the market alone

The 1934 Act had granted protection till 1941, but owing to the World War II the protection was continued year after year till 31st March 1947 A Tariff Board enquiry was to be made before any further extension of protection was granted The enquiry was made in December 1946 and as a result the protection was terminated except in the case of certain special items such as alloy, tool and special steel, high silicon electrical steel sheets, and high carbon and spring steel wires A categorical assurance has, however, been given by the Government of India that if the industry ever asked for protection a tariff inquiry shall be promptly made and a decision arrived at with the least delay In order to encourage the production of certain alloy steels, protection must be granted After a tariff enquiry the Government of India have recently decided to levy

3 The main causes were (i) fall in prices (ii) increased transport charges for distant markets, (iii) demand from railways and engineering firms being less than was expected and (iv) the labour strikes

4 Changes were also necessarily made on account of the Ottawa Agreement of 1934.

protective duty on certain alloy-steels (see footnote 11) imported from the United Kingdom.

In 1939 there were four iron and steel concerns in India. Their total production capacity was 20.18 lakh tons of pig-iron and about 12 5 lakh tons of steel[5]. There were also certain mills which manufactured steel goods. If these are also taken account of then in 1939 we had 18 mills employing 43,731 workers[6] Due to the

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5 The four concerns are as shown below:

Name of concern	*Location*	*Production Capacity (in lakh tons)*	
		Pig Iron	*Steel*
Tisco	Jamshedpur (Bihar)	11 4	10 18
Steel Corporation of Bengal	Napuria (Bengal)	8 5	2 2 5
Indian Iron & Steel Co.	Hirapur & Kulti (Bengal)		
Mysore Iron & Steel Works	Bhadravati (Mysore)	0 23	0 2
		20 18	12 38 12 85

6

Province	*District*	*No of factories*	*No of labourers*	*Percentage of labourers*
Bengal	Howrah	1	593	
	24 Parganas	2	278	
	Burdwan	3	16043	
		6	16914	38 7
Bihar	Manbhumi	1	421	
	Singhbhum	2	22901	
		3	23322	53 3
U P	Cawnpore	2	125	
	Jhansi	1	32	
	Aligarh	1	25	
	Meerut	1	180	
	Saharanpur	1	32	
		6	394	0 9

Continued

protection granted by the Government, the industry increased its production rapidly In 1921 22, it produced 2,70 000 tons of pig iron and 1,26 000 tons of finished steel During 1930 39, the average production had increased to 15 80,000 tons of pig iron and 6,91 000 tons of finished steel It increased further during World War II The maximum was reached sometime in 1943 44 Since then the production of both pig iron and steel has declined [7]

It may be mentioned that the industry has suffered a setback Even normal extensions and expansions have not been made, while there have been rapid expansions in even Canada and Australia Before the War the latter produced no steel, but today its production exceeds that of India

Mysore	Shimoga	1	1973	6 8
Madras	Tanjore	1	41	
	Krishna	1	80	
		2	121	0 3
	Total	18	43731	100 0

7 The figures for the production of iron and steel for particular years are as follows

Year	*Production (In thousand tons)*		
	Pig Iron	Steel Ingots	Finished Steel
1914	16 2	194	99
1921 22	2 0	189	126
1929 30	13 6		41
1930 33	1108		501
1935 39	1580		691
1939 44	1861	1977	931
1944 45	1303	1354	9 3
1945 46	1406	1300	
1946 47	1364	1199	869 (1947)
1948 (Estimate)			825

Demand

The decline in production is not due to any decrease in demand In the pre war period, on an average our annual demand has been about 10 lakh tons[8] It will be far greater in future. The steel required for the various Government projects itself is estimated to be 10 15 lakh tons[9] The Steel Panel Committee had fixed a target of 30 lakh tons[10] of steel per year on the basis of a five year plan Our requirements would very likely exceed 30 lakh tons, but from the practical point of view even this target is difficult to reach. A steel plant takes five years in erection and another two years to acquire momentum However, it is clear that our demand is increasing

The nature of the demand must, however, be clearly understood We no longer want ordinary iron and steel Different types of special steel are required for particular

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8 Really our consumption of steel declined during 1914 39 The average annual consumption of iron and steel during 1935 39 was 25% less than what we consumed in 1914

9 The details of the estimate are given below

Item	Requirement (in lakh tons)
Railways	3 00
Hydro-electricity and other schemes	0 60
Roads	0 10
Agricultural Implements	4 40
Provincial Post war Schemes	2 00
	10 10

10 Before the War the *per capita* production in U S A was 1/2 ton, in U K. 1/3 ton in Japan 1/5 ton In India 30 lakh tons would not mean even 1/100 ton *per capita*

purposes[11]. The class name for these different types of steel is alloy-steel. Alloy steels will play a predominant role in future and research must be made to find more economical alloy compositions.

Iron Resources

The position is not bad even with regard to our iron ore resources. It has been generally understood that compared to other countries our iron-ore resources are insignificant[12] and that the iron content of our ores is also far lower. Even so it has been lately asserted that in respect of such minerals as iron ore, mica and titanium our country has resources enough to dominate the world market. Our resources of high grade ore containing as

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11 Thus nickel-steel is required for weapons, chrome-steel and tungsten steel for cutting purposes, vanadium steel to withstand breakage through sudden jerk, stainless steel for lightness, mobile and decorative purposes, mild alloy-steel for structural purposes (particularly where welding is replacing riveting) and fine quality alloy steel for electric furnaces.

12. According to the League of Nations publication on *Raw Materials and Food Products* in 1937 about 82% of the metallic iron contained in the iron ore extracted in the world that year was due to seven countries :—

	%
America	38.0
Russia	14 3
France	11.7
Sweden	9.3
U. K.	4 4
Germany	2.8
Luxemburg	2 3
	82.8
Others	17.2
	100.0

much as 70% of iron probably exceed those of any other country [13]

However, iron ores are known to exist in Bengal, Bihar, C P, Mysore and Madras In U P., the iron ore is found in the Kumaun division it contains about 39 60% of iron but its total supplies are unknown. Hematite is the best ore It contains generally over 60% iron. According to the existing estimates we have about 285 crores tons of this ore and over 50 crore tons of other varieties Even if we produce and use 50 lakh tons of iron annually, our ore reserves shall last for four centuries

The defect in our iron ore is that it contains a greater proportion of phosphorous and sulphur which make the

13 Almost three fourths of our iron ore contains 60% iron, as will be evident from the following estimated mineral reserves —

Quality of Iron Ore	*Location*	*Mineral Reserves (in crore tons)*	*Iron content (per cent)*
Hematite	(i) *Bihar & Orissa*—		
	Singhbhum	104 7	64
	Kyonjhar	98 8	
	Bonai	64 8	
	Mayurbhanj	1 8	
	(ii) *C P* —		
	Chanda (minimum)	10 0	61 67
	Drug	1	66
	(iii) *Mysore*—		
	Bababudan Hills	2 5—6	42—64 5
		283 6—287 1	
	(iv) *U P* —		
	Kumaon	Not yet known	39—60
Clay iron stone	*Bengal*—		
	Raniguni (minimum)	40	38—46
Laterite	(i) *Berga* —		
	Rajmahal Hills	Ample	43
	(ii) *C. P* —		
	Jubbulpore	4 9	53
Magnesite	*Madras*—		
	Salem	Inexhaustible	55

iron weak. Unfortunately our indigenous coal also has a sufficient percentage of phosphorous. Researches must be carried out to eliminate this defect

Incidentally, it may be mentioned that there is no scarcity even of the coking coal required for converting iron into steel, though there is no doubt of the urgent necessity to conserve the high grade coal resources

Localisation

Is the industry wrongly localised ? Four materials are required for the production of iron ore, coal, lime stone, and water to cool the machinery. The Tisco has all these facilities at Jamshedpur As it fortunately supplies its products to all parts of India, the market has less importance for it The establishment of the Steel Corporation of Bengal and the Indian Iron and Steel Company has not been dependent on similar factors. These concerns are situated in the coal mining areas and get their iron ore from a long distance, due to which the railway freight as also the loading and unloading charges are proportionately less The Calcutta market for their finished product (*viz*, pig iron) is also near at hand

Coal difficulties, shortage of water, transport expenses and distance from markets have hindered the utilization of the iron resources of C P For some time the progress of the Bhadravati Company (Mysore) was also retarded due to the shortage of coal, but they are now making use of the electric methods[14] The electrical devices reduce

14 The company at Bhadravati has entered into a contract with a Norweg an firm for the supply of two electric furnaces which shall increase its production capacity fourfold.

the requirement of coal considerably and in view of the difficulties of conserving the high grade coal, it is essential that we must develop cheap electrical power for smelting the iron ore. Cheap electrical power will make it practicable to use the iron resources of C P, Madras (Salem district)[15], Gwalior and even Kumaon in U P Besides, electrical processes make it possible to produce the various alloy steels

During World War II certain factories using electrical methods have been started They are mainly in Bengal and Bihar, particularly the latter on account of nearness to iron ore and coal It is however true that during 1925 37 there was comparatively greater progress made in Mysore and Bengal[16]. With the spread of the use of the electrical methods, the industry would be decentralised to a certain extent, but even so, for long it will be localised in Bihar and Bengal

Mention must be made of decentralisation of the industry in another way All iron and steel companies do not, and need not, use the iron ore Many companies can manufacture goods from scrap iron Such companies are called re rolling mills In 1944, of 99 re rolling mills in

15 The Madras Government is already examining a scheme for starting a factory at Salem.

16 The percentage distribution of labourers in the iron and steel industry has been as follows

	1925	1931	1937
Bihar	83 6	64 5	53 2
Bengal	15 5	21 5	40 1
Mysore	0 7	14 0	5 5
U P	—	—	0 2
Madras	—	—	1·0
	100 0	100 0	100 0

India, 33 used only scrap iron and 59 used scrap iron also The alloy steel scraps are cheaper also The U S A is already using them to produce the National Emergency Steels. Indian companies may also use internal and imported scrap The development of such companies will also mean decentralisation of the iron and steel industry

But during the World War II there was a scarcity of scrap iron and this scarcity may continue for some time It was perhaps why the Panel Committee on iron and steel concluded that only Bihar, Western Bengal and C P. present a technically sound and valid claim for immediate establishment of iron and steel plants According to them, factories which undertake the processing of iron and steel into further products such as, agricultural implements, motor cars, rolling stock fittings, bolts, nuts, nails and wires should be established in these areas till geological and metallurgical researches justify a case for other parts of India It may also be mentioned that according to the recent announcement of the Government of India, new iron and steel factories would be started by the State

Labour

Is there a shortage of labour ? No The industry employs abont 1,50,000 persons The total number of dependants may be put at 6 00,000 But there have been labour strikes and to no small extent it is due to those who want to achieve something spectacular for the labourers through the use of the strike weapon The State is making efforts to reduce them through compulsion, inducements and industrial truces. The main grievance of the labourers has been that wages are inadequate. One

of the important solutions lies in organising co operative stores and canteens, and this has not received much serious attention so far At the same time, labour, which did prove its capacity and resourcefulness during the War, must realise its responsibilities and act up to them

It is however, true that as we want to produce more steel, we require more and more of trained hands. There has been a lack of skilled labour and personnel. There is no dearth of talent. Indian labour can learn new methods quickly Even Indian women labourers have proved their capacity for complicated methods and pro cesses But facilities and opportunities for train ng and guidance must be provided. Skilled and trained labourers mean a lower cost of production.

Transport

Two other important factors in connection with a decline in production and high prices must be examined They are cost of transport and capital investments It is estimated that every ton of steel means the transport of over six tons of material and that the freight charges constituted about 20 25% of the price before the World War II This increased further during the War

Steel is a basic material and in foreign countries, special railway and shipping rates are quoted to foster the industry In India the transport charges and facilities have been definitely against the interest of the iron and steel industry, and hence against the economic development of the country The Panel Committee came to the conclusion that the railway rates structure is out moded and must be reconstituted To give some

examples, the E I Ry and the B N Ry, which have a monopolistic control over the transport requirements of the Tisco, have earned fabulous amounts at the cost of the industry Every ton of finished steel requires about 1·75 tons of coking coal and instead of showing any favour to this important requirement of the industry, the railways have placed it in the same class as other fuel for purposes of railway freight. Besides, where coal is transported over two or more railways different rates are charged for the distance on each of the railways In other words, the railway freight is not fixed in consideration of the total length of transport No attempt has been made to construct a wagon suitable for the transport of both coal and iron ore. The Railway Board has always stuck to the view that no special preference be granted to any single industry or single user, and ignored the basic importance of the iron and steel industry This attitude must change in the new set-up soon

Capital

A capital of about Rs 25 crores is estimated to be invested in the industry. The rates of dividend have declined of late and therefore the capitalists are not inclined to produce more. In 1946, the different companies generally did not declare a dividend less than 12% The capitalist should not forget that this is not a low rate. But many of the managing agents are foreigners and as such it is not surprising if they do not pay due importance to the needs of the country But even the Tisco has adopted such an attitude

Recently the Government of India has declared

their industrial policy and there is a mention of the iron and steel industry. New units of production are to be State owned and State-managed With regard to the existing iron and steel concerns, the position is to be reviewed after ten years. At that time, if it is considered necessary, the private concerns would be acquired by the State after payment of fair and equitable compensation The Government has, however, made it clear that nothing can be said to be final and that it is not intended that whatever is said in the policy will be followed by the Government at any cost Even then, one of the Directors of Tisco has said that the company had plans of expansion involving an expenditure of over Rs. 25 crores but in view of the ten-year clause industrialists will have to think twice before embarking on such long-term expansion and capital will be shy in coming forth for the purpose. It has also been said that State-management of new undertakings through public corporations would not be as efficient as under private enterprise. This last criticism is welcome, but it is regrettable that Indian capitalists and enterpreneurs have taken so non-co-operating a view with regard to future expansion of the existing Tisco and other iron and steel concerns

Distribution

Lastly, besides production, another factor responsible for the shortage felt by the consumers in India is faulty distribution of what is produced. In spite of the best efforts of the Government of India it cannot be asserted that the present system of distribution is perfect. A detailed enquiry must be made about the present system and necessary changes made as early as possible

Future Planning

The scarcity of scrap iron and steel has forced the re rolling mills to work up to about 60% of their capacity Similarly the iron and steel producers are working below capacity to an equal extent. Steps must be taken to remove this defect So far as the re rolling mills are concerned, it may be suggested that scrap iron and steel be imported by the Government of India and distributed to these mills.

It is also essential that new mills be started by the Government for producing special st el required for the electrical industries Provision must be made also for producing heavy forgings required in the manufacture of diesel engines, motor vehicles and power plants The Industries Conference held in December, 1947 had also emphasized these aspects but it is not known what action the Government of India is taking in this regard Of course, the Government has a scheme to establish a plant or two to produce one million tons of iron and steel An agreement has been signed with Koppers Company of U.S.A.

It might also be said that the state must try—really, it is—its best to secure steel plants and machinery from abroad. It cannot, however, be forgotten that under the existing conditions much should not be hoped in this direction

Although the works costs have been reduced during the last two decades from what was gathered at the Statistical Quality Control Conference (Calcutta, 1940) and other sources, it is evident that there is scope for standardisation, better organisation and economy

X

THE CEMENT INDUSTRY

Modern Portland[1] Cement was unknown till 1824 when Joseph Aspdin of Leeds (England) succeeded in making it Before the advent of cement other ingredients were used instead, and the ancient buildings and monuments stand testimony to the strength of those ingredients But cement (meaning concrete) holds the field today. It has strength, durability, beauty, fire safety and cheapness. Whether roads or bridges, houses or household goods, godowns, or granaries, docks or dams, concrete is used for all construction purposes Cement has thus an important position in the building materials required for the reconstruction and industrial development of India

History

The Indian cement industry is hardly fifty years old. Cement was first manufactured in Madras in 1904, and three cement factories existed in 1913.[2] During the Great War

1 It was called Portland cement because after hardening up it looked like the building stones from the Island of Portland

2 The three companies were established and managed as shown below —

Year of establishment	Company	Managing Agents
1912	Indian Cement Company, Porbander, Kathiawar	Tata & Sons, Bombay
1913	Katni Cement & Industrial Co , Katni, C P	C Macdonald & Co
1913	Bundi Portland Cement Co , Lakheri, Bundi State.	Killick Nixen & Co

(1914-18) their production increased from 1,000 tons to 84,000 tons. The imports decreased from 1,51,000 tons to 20,000 tons during the same period. The three companies reaped enormous profits, and the country was self-sufficient to the extent of 81% of its consumption of cement by the end of the War.[3]

Peace brought more imports, and more companies too. Seven new companies started production during 1919-22. Although the consumption of cement increased, there was an over supply due to imports and internal over-production. Prices decreased and production fell much below the total production capacity. In 1925, India imported only 68,000 tons of cement. She produced 3,61,000 tons, though the production capacity was 4,51,000 tons.[4] In other words, 20 per cent of our production capacity was unused.

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3. (*In thousands of tons*)

Year	Imports	Production	Consumption	Percentage of production to consumption
1914	151	1	152	0 67
1915	126	18	144	12 5
1916	81	39	120	33 0
1917	70	74	144	51 4
1918	20	84	104	80 8

4. The production capacity of the different cement companies in 1924-25 and 1931 were as follows —

	Production-capacity (In thousand tons)	
	1924-25	1931
Indian Cement Co.	30	40
Katni Cement Co.	60	85
uBndi Portland Co.	65	160
Dwarka (Okha) Portland Co.	100	100
Sone Valley Co.	50	130
Jubbulpur Portland Co.	60	50
Gwalior „ „	40	45
Punjab „ „	36	80
South India Portland Co.	10	10
Sahabad „ „	Little	120
Total	451	820

During 1925 30 the imports were rather stable. Internal production of cement increased though at a decreasing rate It stood at 5,64,000 tons in 1930 The use of cement also went up from 4,29,000 tons in 1925 to 6,36,000 tons in 1929. The next year the consumption declined by about 4,000 tons. Our production was still below the production capacity. An idea of the surplus production capacity can be got from the fact that the 10 companies of 1925 had increased their capacity to 820,000 tons in 1930 31, that is, about 50% above the total production of cement. Clearly, the cement industry was falling on evil days, but there were certain silver linings to the otherwise dark clouds.

Tariff Board

In 1924, the cement industrialists applied to the Government of India for protection against foreign competition A Tariff Board was appointed Due to the existence of a destructive rate-war among the Indian cement producers, the Tariff Board did not recommend any protection, though it was not averse to the grant of a bounty. If advised the producers to co operate in the field of marketing.

However, in 1926 the Government of India changed the import duty on cement from 15% *ad valorem* to Re. 9 per ton. The same year the cement producers established an Indian Cement Marketing Association. In order to find new uses, the Concrete Association of India was created in 1927. In 1930 the Marketing Association was replaced by the Cement Marketing Company of India Limited. It arranged the sale of cement from different companies on a quota basis. The amount to be sold for each company was fixed on the basis of its previous sales.

The Marketing Company did well till 1935 Then it was found that under the new system not infrequently cement was supplied in the markets from distant companies, although some company located nearby could have undertaken the supply easily and at cheaper cost An improvement was therefore considered essential.

The Associated Cement Company

Consequently, in 1936 the various cement companies combined to form the Associated Cement Company. It had four important objectives —

(i) to organise sales in the most advantageous way ;

(ii) to regulate production in relation to demand for effecting economies in production and distribution costs ,

(iii) to improve the industry by developing production in suitable localities , and

(iv) to control production in unsuitable areas

Economic Depression

There was an economic depression in 1931, which reduced the internal production of cement still below the production capacity. In 1936, factories were started by the Dalmia Managing Agency in different parts of the country. Dalmia claimed that the cost of production could be further reduced and thus the consumption of cement could be increased. For some years there was a destructive competition between the two rival groups though they were not equally matched so far as production capacity was concerned, as is clear from the distribu-

tion of the production capacity before World War II shown below :—

Name	Production capacity (In lakhs of tons)
A. C. C. ...	18·6
Dalmia ...	5·6
Others ...	3 6
Total ...	27 8

Fortunately for us, they have now compromised However, the production and consumption of cement in the country continuously increased during 1931-39, particularly after 1936 [5] In 1938 39, the import was 21,000 tons, the production 15,12,000 tons and the consumption 15,33,000 tons This was about two and a half times the 1931 position, except with regard to import which was one third of what it was in 1931.

Among the industries developed in India in this century, the cement industry deserves a special mention. In

[5] The statistical figures for the period 1930 47 are as given below :—

	Imports	Production	Consumption
		(In thousand tons)	
1930 31	64	570	634
1935 36	43	886	929
1936 37	48	997	1045
1937 38	25	1170	1195
1938 39	21	1512	1533
		(In lakhs of tons)	
1939 40	—	17 3	—
1940 41	—	17 3	—
1941 42	—	22 5	—
1942 43	—	21 8	—
1943-44	—	21 1	—
1944 45	—	20 5	—
1945-46	—	20 8	—
1946-47	—	20 2	—

1940-41, we imported only 4 3 thousand tons of cement costing Rs 6 lakhs The same year we even exported some cement The A C. C already has on hand orders for exports of cement The exports are mainly to countries like Iraq, Ceylon and the Dutch East Indies Within forty years, the industry has been developed into an exporting industry During World War II, the production capacity of the cement industry was 27,82,000 tons, though the annual production never exceeded 22,50,000 tons (1941 42) Since 1942, the production has been continuously decreasing. Even after partition with a production capacity of about 22 lakh tons, our production is about 15 lakh tons per year. In the first nine months of 1948 it has been about 11 lakh tons

Although there has been much undesirable competition between the different cement producers in India, the cement companies have distributed high profits In peace time the cost of production was estimated to be about Rs 25 30 per ton and the market price was generally not below Rs 45 per ton There was therefore a margin of about Rs 15 per ton It is estimated that with proper organization a cement factory can return its capital in five years Today the reserve fund and the share capital invested in the industry amount to about Rs 17 crores.

Labour

Twenty five years ago the industry employed 5,000 workers In 1939, the number had increased to 10,000 Today it exceeds 25,000

The percentage distribution of the industry by labour force underwent a change between 1925 and 1937 The

industry became more dispersed as is clear from the following table —

Province	Percentage distribution of labour	
	(1925)	(1937)
C P	35 8	31 8
Punjab	15 2	13 3
Bihar	9 7	16 9
Madras	—	2 3
Rajputana	28 0	17 8
Hyderabad	—	9 2
Baroda	—	3 6
Bombay States	11 3	5 4
	100 0	100 0

As a result of the enquiry recently made by the Rege Committee, it was found that the majority of the workers are not skilled workers Really, the cement companies do not require skilled workers Consequently the wages are not high One third of them earned between 8 12 annas per day and 61 47% do not get even a rupee per day Apart from low wages, the cement workers are better placed than other industrial workers, particularly with regard to housing, social security and welfare. Due to plenty of land and own supply of cement, satisfactory arrangement existed in regard to housing of the labourers In addition, arrangements have been made for medical care, education, games including indoor games and even cheap grain shops The facilities are better provided by the A C C group An aid fund is being organized for help to the worker in times of need. There is also provision

for provident fund and service gratuity. In the Dalmia group, there is provision only for provident fund, and that too for workers earning more than Rs 25 per month. This is undesirable and should be remedied The cement worker is therefore well off except in regard to his wages

Size of the Firms

Before we deal with the present problems and the future planning of the industry, it is advisable to say something about the size of the different companies and the location of the industry Business considerations demand that the size of the firm should conduce to minimum cost The Tariff Board (1925) was of the opinion that the purpose would be served if each factory has two furnaces and a production capacity of 40 000 tons At that time the number of companies was small and each got an opportunity to serve a good portion of the country's demand It may be argued that as the number of factories increase, each may have a smaller market to serve and that this will affect the size of the factories. But we must not ignore the fact that the demand for cement is increasing by leaps So, though each factory may serve a small area, it may have considerable demand. Till now, of the eighteen factories, four have a production capacity of between 60 and 80,000 tons and ten factories have a production capacity exceeding 1,00 000 tons Of the ten, seven have a production capacity of over 1,50,000 tons each. The tendency is clear ly towards a unit of 1 00,000 tons capacity

Location

The location of the industry has been rather unevenly distributed Both in regard to the total production and

the number of factories, a major portion of the industry has been concentrated in four provinces, *viz*, Bihar, Madras, Sind and the Punjab. Production has not been so far undertaken in U.P., Orissa, Bengal and Bombay. The C P. too has not produced much. This does not mean that cement cannot be produced in these regions. The situation is being remedied in the new planning of the present Government of India. Out of 261 lakhs of the additional capacity for which a plan has been made, 5,00,000 tons, *i e.*, about one fifth, has been allotted to these provinces.

The distribution of the additional production capacity in present India is as follows :—

Province	Existing	Additional production-capacity (in lakh tons)
Bombay ..	—	1·0
Bihar ..	5 9	4·7
Assam ..	—	1 5
C P. ...	3·6	2 0
U. P ..	—	2 0
Orissa ...	—	—
Bengal ...	—	—
Madras ...	3 6	2 3
Indian States ..	9·2	10 0
Others ..	—	2 5
Total	22 3	26 1

In U. P the construction of a cement plant costing Rs. 2 crores has been placed with Messrs. Vickers Armstrong Ltd. It will be installed near Markundi, south of Robertsganj in the Mirzapur District to produce 700 tons of cement per day. The lay-out of the plant will provide for extensions to produce up to 1,400 tons per day. The plant

is expected to function fully after 1950 monsoon. The limestone deposits at Markundi are sufficient to last for 50 years In the vicinity there are deposits of limestone to last this plant for centuries

Three factors have to be considered to determine the location of the industry—raw materials, source of power and the market Of the three essential raw materials, viz., limestone, loam and gypsum, the first two are widely distributed in the country and can be found near the railway lines. That is why the companies are generally located near the railways Gypsum has to be fetched from a distance but the cost is not high C P. has had raw materials and markets too, but its importance will decrease with the development of hydro electricity So far as the third factor, market, is concerned, there was a time when, in order to avoid foreign competition, our factories were located away from the ports and supplied only the internal markets. This danger is no longer important The industry is tending to distribute itself, not only with regard to the Indian provinces but also the Indian States, which are also allotted about two fifths of the additional planned production capacity.

Future Planning

In the present India the State has planned for an additional production capacity of 26 lakh tons of cement Of the eighteen companies, 14 were to increase their production capacity, and six new companies are to be established Many companies have placed their orders in England, Denmark and America. It was estimated that by 1952, when the public and the government would re-

quire 40 and 20 lakh tons of cement respectively,[6] we shall be able to meet the demand from internal production The original plan was to produce 60 lakh tons of cement in 1952 This has been reduced to 50 lakh tons after the division of the country.

Before partition the *per capita* production of cement came to 14 6 lbs annually After partition it was reduced to 13 6 lbs and on completion of the projects it is expected to be 26 lbs

Present Problems

At present cement is not available easily and at low price This is partly due to difficulties of distribution and partly due to the high cost and uncertainty of production In 1942 the Central Government had instituted a control and taken 80% of the cement for military use Although with the expiry of the Defence of India Rules, the Central control has gone, the provinces still exercise a control on the production and distribution of cement The situation will ease as the control is withdrawn

As to the high cost of production, wages have gone up. Also the price of jute bags has increased, and it is unfavourably affected by the division of the country and the imposition of an export duty on raw jute by Pakistan

Another difficulty is the uncertainty of the transport of coal For every ton of cement, there is required one

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6 According to an estimate the demand for cement in the post war period, *compared to the pre war consumptions* would be as follows —

Housing	Railways Municipalities etc	Roads runways bridges etc	Agriculture	Public works including hydroelectric construction
175%	150%	300%	225%	300%

third ton of coal At this rate for a production of even 21 lakh tons of cement, about 60 000 tons of coal are needed per month Recently, coal has not been available more than 40 000 to 45 000 tons per month The Government of India is making efforts to solve the problem of transport but there is not much hope Therefore, one would not be surprised if the production of cement decreases further

From the point of view of increased production, a third bottleneck is labour trouble and a fourth is the lack of machinery During the war, the cement plants were used under pressure and have depreciated On the other hand, new machinery has not been imported To get over this difficulty, some factories have started manufacturing their own machinery Particularly, the A C C has established a factory at Sahabad to manufacture 50% of cement machinery required by them Even so, we have to import from U S A, England, Denmark and other foreign countries, such machines as power plants, boilers reduction gears and electric motors The sooner we get them the faster will our production increase

XI

THE INDIAN COTTON INDUSTRY

Cotton cloth has been used in India from times immemorial. According to Manu the sacred thread of Brahmins in the Vedic age was made of cotton. The cloths found in the excavations at Mohenjodaro (Sind) are 5,000 years old. Cotton cloth was imported by the Egyptians from India in 600 B.C. China knew cotton before but discovered its use in cloth making only in the eighth century A.D. A century later the Spanish Moors introduced it in Europe. America got it much later.

Yet America today leads the world and supplies 46% of the world production of cotton cloth. India comes next with 14% of the world supply. Pre-war America supplied about 27%, Japan 13% and India came third with her 12% of the world supply. The division of the country has led to a further deterioration of the situation as nearly half of our supplies of cotton came from what is now Pakistan, though we have about 380 mills while Pakistan has only 15. The cotton textile industry is our biggest non-agricultural industry.

History

The history of Indian cotton and cotton textiles during the last two centuries is the history of the economic strangulation of the Indian industry. Only a century and a quarter back, India supplied England largely with textiles. We sent the famous Longcloths, the calicoes,

the chintz, and the Dacca muslin In 1816 17 we exported cotton cloth worth about Rs 1 65 crores to England. But under compulsion the Indian workmen had to divulge *their bleaching methods* and other trade secrets to Manchester and Lancashire International exhibitions were held and thirteen sets[1] of eighteen volumes, each containing 700 specimens of the Indian textile art and craft, were distributed all over England, in order to educate the English manufacturers in what Indians require and how it is made Heavy taxes were levied on the Indian goods sent to England These factors destroyed the Indian textile industry Rather the hand spinning and hand-weaving aspect of the Indian textile industry was over. But soon, there began to grow large scale mechanical spinning and weaving.

The Indian textile mill industry began in the year 1851, when 500 labourers worked in a mill Since then the number of mills and their labourers has increased continuously, as also the average number of workers per mill. The periods 1895 1905, 1906 13, 1920 25 and 1935 40 were, however, periods of abnormal progress due to different reasons During 1895 1905 the adverse factors were famine and plague in Bombay, high price of cotton on account of speculation in America, and the economic depression in China which was the chief export market for our yarn The next period was characterised by an economic depression, that is, low prices, unsold stocks, inactivity and greater unemployment During 1920 25 the Japanese competition was making itself felt In the

1 Seven sets are in India also The Government should now make them available to the handloom workers, their institutions and the Indian manufacturers.

immediately pre-war period there was a shortage of big mills in the Bombay area and small-sized mills were being established all over India.

In a mill spindles are essential for spinning and looms for weaving. In India during 1880-1935 the average number of spindles per mill has almost remained stationery, but the number of looms per mill has increased from 229 to 545. Till 1896 as compared to the looms, the proportion of the spindles was increasing, showing that the Indian textile industry made more progress with regard to spinning than weaving. Thereafter, more progress has taken place with regard to weaving.

During the first four decades of this century, the production of yarn increased by about 200%, but the production of coarse yarn continuously decreased proportionately and that of fine yarn increased tremendously, particularly after 1926 when the first Tariff Board was appointed by the Government of India to report whether protection should be granted to the textile industry. After the World War I the production of coarse yarn increased by about 33%, that of medium yarn by about 66% and that of fine yarn about 700%. Even so, half of our production was coarse yarn, and one fourth, medium yarn.

Both on account of the increasing taste of the people for fine production and the suitability of the machines for the economical use of the fine yarns, the Indian mills have consumed more of the fine yarn. On the eve of World War II the production of cloth had increased by about 775%. At the end of the Great War, the increase was greatest in the case of coloured cloth, shirting and

other varieties Thereafter the progress was more in the case of coloured cloth Dhoties and shirting came next. Dhoties [and shirting each accounted for slightly more than one fourth of our mill production, while in coloured cloth and other varieties each was about one fifth of the total production

Yet in 1938 39, out of our total available supplies of cloth, less than two thirds was due to our mills, one-fourth due to handlooms and about 12% from imports During 1913 39, while the mill production increased by 267%, the handloom production increased by 80%

Size

Unlike the iron and steel industry, there are few operations in the textile industry which should be performed on a large scale for economy and efficiency. Of course, it is true that the greater the size of a mill, the lower the cost of management and non manufacturing operations per unit of production If 'power' is purchased from outside, a larger size will be favoured. A larger size and standard cotton piece goods both go together. But if, as in India, people possess a marked taste for a variety of patterns, the size of the mills will be small and moderate Besides, we have a system of managing agents The same agency looks after a number of mills and secures for them the advantages of bulk purchase and service, even if the individual mills are small in size

Both with regard of spinning and weaving, the size of the Indian textile mills is greatest in Bombay. Next comes Ahmedabad, and last the rest of India This does not mean that these other parts do not have mills of the

largest size Most of the mills have less than 30 000 spindles and 600 looms each The Tariff Board had considered the best size of a mill to to be 35,000 to 45 000 spindles and 1,000 looms This was an over estimate Even in U S A. and China most of the mills do not have more than 30,000 spindles. However, the size of the spinning mills is going down except in the Bombay area It is decreasing in the weaving mills also, particularly in the Bombay area

Location

To a certain extent, the size of the mill is determined by the location of the mill In the case of the cotton textile industry, the raw material is not an important factor governing its location Since cotton is not a weight losing material, it is not essential that the mills be located in the cotton area Instead, the long period tendency is for location near the consumers' market Thus Bombay cotton mills employed 41 6% of the cotton mill workers in 1921 This decreased to 24% in 1939 and the industry had spread rapidly to Madras, U P, Bengal, C P, and among the States, to Central India, Baroda, Mysore, Bombay and Hyderabad During 1921 39 there was definitely a very rapid increase of mills in the Indian State (297% as against 51% in Indian Provinces) and a decrease of textile mills and production in Bombay, Madras, Howrah, Nandgoan and Pondicherry So far as the working population in the different regions are concerned a very great percentage is employed in the cotton mills in the Bombay, Delhi, Ajmer, Mysore Central India and Baroda areas, and a fair share in C P and Madras But in U P, Bengal and Punjab, less than half of the

fair share of the working population is engaged in mill-textile production

Textile production requires a humid climate, but it can be artificially created Bombay, Bangalore and Cawnpore have such a climate But mills have been located in the Bombay area because of the existence of a big cotton market and business men, as well as due to better transport connections with the interior and foreign countries Bangalore has been a centre for the marketing of cotton and piece goods Madras mills have enjoyed a government subsidy, supply of cheap labour and the existence from before of extensive handloom weaving Cawnpore is extensively connected with the surrounding areas, and has a facility of cheap labour and low rents In fact, in all interior places the cost of labour—which is usually 50 55% of the total cost of production of textiles—and rents and rates are low. With the increased production of hydro electric ty, the expenditure on power is decreasing, and this also helps the decentralisation of the industry

With the exception of Bombay, all other provinces in India are deficit areas and the Panel Committee on textiles recommended the establishment of new mills with a view to increasing the self sufficiency in various areas Thus in 1945, U P Mills had 7·7 lakh spindles and the Panel Committee (1945) had recommended an increase of about 2·9 lakh spindles Most of the mills in U P and Madras have produced yarns to be supplied to handlooms, but they can easily manufacture more piece goods and thus reduce their dependence on Bombay and Ahmedabad

Although the Bombay mills are producing an increasing percentage of standardised cloth like dhoties and

shirting, both Bombay and Ahmedabad are trying to specialise in higher qualities of yarn and cloth. Till now, their share in piece goods is greater than that in yarn. The reason lies in the fact that North and South Indian mills have been mostly manufacturing yarn to be supplied to the handloom weavers They can very well take to manufacturing cloth It can be safely forecast that in due course they can very well take to manufacturing cloth Thus the cotton industry is likely to become widely dispersed

Mechanical Equipment

Even now we are almost altogether dependent on foreign countries for the supply of textile machinery, tools, and implements. Both with regard to the spindles and looms we have imitated the Lancashire mills We have neither used much of the ring looms, nor the automatic looms in place of the plain looms The ring spindles are more efficient. In America the automatic looms have been found to be suitable for using coarser yarn and for producing cheaper cloth of standardised varieties As Indians, we have liked a variety of cloths These varieties were formerly easily produced by the handloom weaver. We have not used the hand knotter and the machine used for the drawing in of warps

During 1914 44, the weight of cotton spun into yarn per spindle increased by about 60 to 165 lbs., while the length of cloth woven per loom increased by about 101% to 24 1 thousand yards Thus a greater progress has been made with regard to the efficiency of weaving But so far as the length of cloth per pound of

yarn is concerned it does not show much progress. During the World War II (1938-45) it decreased from 4 68 yards to 3 93 yards per pound of yarn

Today we have about 103 lakh spindles and 2 03 lakh of looms in the Indian textile mills A majority of these have to be replaced now The replacement is overdue for 33 lakh spindles and 0 5 lakh looms for which the estimated cost is Rs 63 crores

Taking the present Indian population at 35 crores, the supply of cloth *per capita* comes to about 14 8 yards per year In order to increase it to 18 yards, the mill production should be increased by 110 crore yards For this purpose we shall require about 26 lakh spindles. If we want to produce the additional cloth in the Indian mills, another 0 52 lakh looms will be required The estimated cost is Rs 50 crores

But it is difficult to get a supply of 56 lakh spindles and about one lakh looms Before the World War II we imported textile machines from Britain, Japan and Germany Britain exported ninety percent of its textile machinery production and we were its major customers. The position today is different Fifty thousand spindles, for which orders have been placed in Britain, are not expected to arrive before 1950 Machinery can be had from America but there are three difficulties America is not quite interested in India , the American prices are those of Britain , dollars are difficult to secure However a lakh of spindles were to be supplied by Japan in 1948 and another 2 5 lakhs can possibly be got from France, Switzerland and Czechoslovakia.

It is, therefore, of the utmost importance that textile machinery be manufactured in India We already have the Textile Machinery Corporation (1939) which is not yet working upto its planned capacity of producing 1 lakh spindles and 2,000 looms The Machinery Manufacturing Corporation (1947) and the National Machinery Manufacturers Ltd , are two more additions The former will manufacture complete textile machinery, while the latter will produce 4 8 lakhs spindles per year.

The allotment of new spindles and looms is in the hands of the Government of India It has been recommended that they should be so allotted as (i) to decentralise the industry to reduce the dangers of concentration and the cost of distribution, (ii) to promote regional self-sufficiency and (iii) to raise the smaller mills to the economic size of 25,000 spindles and 600 looms The Post war Planning Committee had recommended that a condition should also be imposed for the supply of a certain per centage of yarn to the handloom weavers

In fact, the difficulty of expanding the mills points to the desirability of expanding the activities of the weavers Both hand spinning and hand weaving or power-weaving can be encouraged

Capital

Ninety nine per cent of the capital in textile mills is provided by Indians A large part of the capital is invested in buildings and machines Construction expenses have been fairly reasonable The buildings are of three or four stories and less suitable for the Indian climate than the single story building with a saw tooth roof. The average capital cost per spindle and looms compares favourably with that for England and U S.A. and is about

half of that in Japan. But the Indian mills have too much capital, they are over capitalised and yet for working capital many mills depend on short term deposits and loans which are apt to be drastically curtailed during difficult times These financing defects have to be removed. Of course, so far as profits are concerned, there have been great variations On the whole, the profits have been satisfactory. They have been rather on the high side Recently, the Government of India has imposed limitations on the dividends to be declared by the mills. In the case of textile mills, most of the maximum limits are higher than the dividends declared in 1947. There is, therefore, scope for declaring the same dividends or increasing them slightly Of course in the absence of dividend limitation some mills may be able to declare higher dividends in 1948 The leading companies had declared a dividend of about 15 to 30% in 1946 and about 10 to 22% in 1947.

Labour

In 1947 the Indian cotton mills employed 4 95 lakh persons About four fifths of the workers are males In some centres, the proportion of females is slowly increasing The proportion of children is about 2% and it is fast decreasing The percentage of women and children workers is greater in the Ahmedabad and Sholapur mills because families settle for this work in the rural centres. It also explains why these centres have less of immigrant labourers On the other hand Bombay has the largest number of immigrants.

There are some of the most effective trade unions among the textile workers. The textile trade union

membership increased by more than 25% during the period 1 27 38 Much labour trouble has arisen in the cotton mill. The number of disputes have increased, but the proportion of disputes to the disputes in all industries decreased from about one half during 1921 36 to about one third during 193/ 39. The loss due to strikes seems to show a seasonal tendency It is more during October and between February and May

During recent years, the labourers have been given larger wages and the hours of work have been reduced from 54 to 48 per week. In 1947, at a conference of provincial governments held by the Government of India it was emphasized that in order to solve the immediate shortage of cloth, the mills might work three shifts and the hours of work might be increased to 54 But labour leaders would not let the workers sacrifice their health, leisure and home life The Bombay Government was also vehemently opposed to the proposal on grounds of health and efficiency and the lack of housing facilities for the extra hands who would immigrate to fill the ranks of the third shift workers

It is true that there still remains much to be done with regard to housing, education and welfare of the workers But the efficiency of the workers seems to be increasing and it is also true that the trade unions are not promoting the system of joint and co operative purchase and service

Handloom Cloth

Our textile machinery is worn out Our textile labourers are hostile Our capitalists are hesitant to invest and rather unwilling to deliver the goods We

must therefore look out for an alternative remedy—hand-spinning and hand-weaving. It is true that hand-spinning has declined in India but handloom weaving has provided us with the same percentage (about 25%) of our textiles consumption for the last five decades. If we ignore the present crisis, one fourth of the cloth used in India has been handloom cloth Of all the cotton consumed in India, the handlooms account for about two sevenths

Even after the division of the country, we still have four fifths of the handlooms of undivided India and a majority of these are concentrated in Madras, U P. and Bombay While *saris* account for 95% of the handloom cloth in Madras and Bombay and 75% in C.P , 60% of the production in U.P is coarse *khad* The handlooms seem to be more suitable for the production of very coarse and very fine cloth In Japan, out of 2 1 lakh employees in the textiles industry six sevenths are in enterprises with less than 200 workers each What these small workshops produce is fine stuff and is mostly consumed in Japan itself The product of the bigger mills is mostly exported Like Japan[2], India also has plenty of cheap labour and there is full scope for producing hydel power at low rates in abundance If we also develop a co operative relationship between the handloom

weavers and the large enterprises, the short period shortage can be relieved At the same time the industry providing the greatest employment to non agricultural labour in India will not decline The mills should supply the yarn and must give up the production of cloth for which the handlooms are most suited In case the yarn cannot be supplied, let there be an all out campaign for hand spinning and hand weaving In order to encourage the demand for *khaddar* let it be made compulsory for all government servants to attend to their duties in *khaddar* and let the control shops supply handloom cloth instead of mill cloth

Cotton

One of the serious hindrances to an adequate cloth supply and a prosperous textiles industry is the supply of cotton

The following table summarises the pre war position and now —

1 Production (000 Bales)	1938 39		1945-46	
Length of yarn	India	Pakistan	India	Pakistan
(i) Less than 7/8"	2700	429	966	238
(ii) 7/8" 1"	834	906	1064	1089
(iii) Over 1"		72	23	58
Total	3594	1467	2053	1385
	5061		3438	
2. Area under cotton (in million acres)	23 0		14 5	
3 Yield (in bales per thousand acres)	215		237	
4 No. of mills (1947)			380	15

(Continued)

5. Consumpt on of cotton by undivided Indian mills (000's bales)		
(i) Indian	3151	3871
(ii) Foreign	650	605
6 Import of yarn (000's bales)	91	0 3
7. Export (000 s bales)	3274	1038

One-fifth to one sixth of the total cotton used by the Indian mills came from foreign countries and in the present world conditions there seems too little chance of increasing the cotton imports Undivided India has, therefore, to depend mainly on its own resources. The present Indian Union has about 26/27th of the mills of undivided India But before World War II it produced about 70% of the cotton and Pakistan produced the balance of 30% Today India produces about 60% and Pakistan 40% The Indian mills require about 3 6 million bales of cotton and with the best of imports we can have a supply of about 2 6 million bales. If the mills are to be kept going, we must get one million bales of cotton Pakistan has surplus cotton and can let us have it. We must not put much faith in it and try to help ourselves in other ways For Pakistan can export cotton to other countries it has more of medium and long staple cotton and there is a world demand for these In return Pakistan can negotiate with the foreigners for foreign capital and capital goods. It is already doing so and it has been promised by certain British firms that they supply will within a year equipment for six textile mills. It is, however, true that it would be both to the advantage of India and

Pakistan if both of them could co operate and work together for greater industrial development

It must also be noted that India has a greater percentage of short staple and the Indian mills have been putting a demand for long staple cotton The short staple cotton that we now produce in India is not more than what our mills can use So we should try to increase the production of medium and long staple cotton The question is not that the area under short staple cotton should be decreased but that we should try to increase the production of medium and long staple cotton

The production of cotton can be increased in two ways. One, the area under cotton may be increased In the short period it cannot get a priority over food acreage Two, the yield per acre may be increased The yield per acre in pounds pre war was *Egypt* 535 *USA*, 268 China, 204 Japan, 196 Italy, 170, and India 89 The Indian soil and climate do not materially differ from those in some of these countries The Indian Central Cotton Committee is mainly responsible for the researches and improvements to be made The Committee has been in favour of the establishment of regional cotton research stations so as to serve the interests of each major cotton growing region It has stressed the necessity for team work It bears in mind the fact that in dealing with the problem of increasing the yield, a close study should be made of the factors militating against progress, particular mention may be made of the customs and taboos of the village society, inefficient methods of publicity, propaganda and demonstration, inefficient training given

to the staff engaged on extension work and the impracticability of some of the recommendations made to the farmers. A very substantial rise in crop yields would result if the well known methods of improving yields are applied in practice The important methods are (*i*) breeding and distribution of heavier yielding varieties, (*ii*) manuring, (*iii*) desirable crop rotation, (*iv*) extension of irrigation, (*v*) prevention of soil erosion and conservation of rain water in unirrigated tracts, (*vi*) crop inter cultivation and weeding, and (*vii*) control of insects and diseases

But it cannot as yet be asserted to what extent the medium and long staple cotton can be grown in India And the questions arise "Why should we not use the short staple cotton? Did India not grow mainly the short-staple cotton in the past? Which gives a more stable, comfortable and strong stuff—the short staple cotton or the long staple cotton? Cannot we develop the industry, as Japan did, of mixing the short staple cotton with a percentage of long staple cotton and using the mixture? Cannot machinery be produced for using the short staple cotton? Can the handlooms and the power looms use the short staple cotton yarn?"

If cotton cannot be produced and made available in sufficient quantity, it may be suggested that cloth made of other fibres should be produced. The important other fibres are silk and rayon (artificial silk), particularly the latter.

XII

THE SUGAR INDUSTRY

Sugar is not new to this country. India is the birthplace of sugarcane. We have used it for thousands of years in forms which are more nutritious and less injurious to the human system than white sugar. *Gur, Khandsari* and *Boora* are not known to have been produced in other countries White sugar is most harmful yet an increasing percentage of our population is becoming addicted to it. Before World War II it was estimated that 50 85% of white sugar was consumed in the urban areas This is bad Besides, a progressive white sugar industry means unemployment to those engaged in the production of *gur, khandsari* and *boora*. It is high time that the State did something to check this evil heritage of the Western countries

History

However, the white sugar industry (or merely the sugar industry) was developed after 1931 when protection was granted by the Government of India. The consumption of white sugar began to increase towards the end of the last century. Consequently more and more of it was imported.* This was not possible during the Great War.

1 *It is interesting to note that in the first half of the 19th century, India exported sugar to England. It was only after 1846 that England took action to stop the flow and in fact reverse it A demand for white sugar seems to have been created which has led today to such large and growing consumption of white sugar at high cost and injury to the human system

In a report submitted by Mr McKenna it was stressed that there was a great scope for this industry in this country, but little was done by the Government to establish the industry After the Great War, the Government of India levied an import duty on sugar Benefiting by it some small sugar factories were established In 1929, there were 38 factories producing 1 1 lakh tons of white sugar and *khandsari*, which was about one tenth of our consumption

Due to the Sugar Committee of the Imperial (now Indian) Council of Agricultural Research, a Tariff Board was appointed in 1930 Upon its report the Government of India levied a protective duty of Rs 7 4 per hundredweight on imported sugar At that time we had 49 factories (including 17 refineries) producing 29% of the sugar consumed in India Thereafter the industry progressed very rapidly In 1936-37 we had 137 factories and 9 refineries producing 98% of the sugar consumed by us The refineries declined because they could not compete in cost with the sugar factories. The total consumption of sugar in that year was 11·5 lakh tons, *i.e*, slightly more than that (11 2 lakh tons) of 1931

Instead of continuously increasing, the production of sugar began to fluctuate after 1936 37 The maximum production (12 4 lakh tons) was done in 1939-40 by 145 factories Though in 1943 44 151 factories produced 12·2 lakh tons of sugar, it has since been declining. In 1946-47 only 9 3 lakh tons of sugar was produced by 151 factories employing 1 2 lakh workers. It has increased to 10½ lakh tons during 1947-48, with only 134 factories working The *per capita* consumption of sugar was maximum in 1936 37

(7 3 lb per head per year) In 1945 46 it was only about 5·5 lb. *per capita* Incidentally, it may be mentioned that during the same period the *per capita* consumption of *gur* decreased from 26 7 lb to 24 lb

The import of sugar decreased sharply from 3 2 lakh tons in 1932 33 to a few tons in 1943 44 and to zero in 1945 46 Instead, India has been building up a small export trade with the neighbouring countries This is important from political considerations These countries can even be our potential future customers of sugar During recent years our exports have been about 15 18 thousand tons per year It is estimated we can sell even 2,00,000 tons in the export markets But none should agree to the recommendation of the Panel Committee that the Government should subsidise (*i e*, make financial grant) so that sugar may be exported at a lower price

About half of the sugarcane produced in India is used to produce *gur*, one fourth for chewing *khandsari*, etc, and only one fourth is used for manufacturing sugar The predominance of *gur* is partly due to economic considerations and partly due to the traditional choice But sugar is more important now than the latter due to ignorance and the weakness to copy the urban people From a maund of sugarcane, the quantity of *gur* to be produced is roughly double than that of sugar Besides, the money cost per maund of sugarcane is less in the case of *gur* than that of sugar.

Location

Sugar is mainly produced in the U. P and Bihar. In 1947 48, out of 134 working factories the two provinces had 65 and 29 factories, respectively, which together

produced 7 5 lakh tons, *i e*, more than 70% of the sugar produced in India Next in importance are Bombay and Madras *These two provinces have certain definite ad* vantages The yield of sugar per acre is 2½ times that in the U P and B har The crushing season in Bombay is much longer than in the U. P and Bihar Yet the sugar industry has not been more developed in South India Four reasons may be mentioned. One, there is a wide range of *more paying cash crops like groundnut cotton chillies,* tobacco and plantains Two, an increase in sugarcane cultivation would mean a decrease in rice cultivation, and rice is a staple food there Three, there is a lack of compact blocks so that cane have to be secured from long distances, which me n a loss of juice through evaporation Four, the greater yield is due to heavy manuring and better irrigation both of which mean a larger cost of production Similarly, the Punjab has an unsuitable climate including frost, and Bengal has more valuable crops in jute and paddy Mysore is however, suitable for better sugarcane crop and has a bright future

Seventy per cent of the cost of production of sugar is due to the price paid for sugarcane Hence the existence of compact areas supplying cane and of transport facilities for carrying the cane to the factory has located the factories in the U P and Bihar Yet another factor is the cost of *distribution* (*i e*, transport) to the market It is due to the high cost of distribution that factories are be ing started slowly all over the country There is a world shortage of sugar and it is likely to remain so for some years There is, therefore scope for the export of sugar This factor should lead to the establishment of factories in coastal regions

Although more than 90 per cent of the area is already under improved varieties of sugarcane, the yield per acre has not increased much It is still about 15 tons per acre as compared with 21 tons in Australia, 28 tons in the Philippines, 30 tons in Egypt and 56 tons in Java The reason lies in the lack of cheap manure and cheap irrigation The various multi purpose river projects, such as the Rihand Dam in the U P and the Damodar Projects in Bihar should mean more water, and more electricity to produce cheap manure Then the sugar industry would be more widely distributed Since the transport of sugarcane over long distances means a loss of juice, the juice may be locally converted into *gur*, which may then be supplied to producers of *khandsari*, *boora* and sugar. But this method has proved more costly and so the production of this sugar has decreased from 80,000 tons in 1932 33 to 4,000 tons in 1947 48

In the U.P sugar is mainly produced in the Gorakhpur, Fyzabad and Lucknow Divisions, as also in the Western U. P. comprising the Rohilkhand and the Meerut Divisions The development in Western U P has been due to the tube-wells After the completion of the Rihand Dam near Mirzapur, greater irrigation facilities should lead to more sugar production in the Allahabad and Banaras Divisions. The Panel Committee on Sugar recommended the establishment of 15 new factories but said no new unit should be started in the U P and Bihar. The Government of India wisely decided not to accept the latter recommendation

Incidentally it may be mentioned that out of 172 mills only 10 are located in Pakistan The division of the country has little effect on the sugar industry.

Size

The distribution of the sugar mills by size in the different provinces of the Indian Union in 1946 47 was as shown below —

Size (In tons)	U P	Bihar	Mad ras	Bom bay	West Bengal	Orissa	East Punjab	Indian Sta es
50 249	2	1	6	—	1	2	—	3
250 449	3	1	2	3	—	—	1	5
450 649	4	1	2	1	1	—	—	6
650 849	26	11	—	3	1	—	—	3
850 1049	16	9	1	1	—	—	—	1
1050 1249	5	3	—	2	—	—	—	2
1250 and over	15	6	1	—	—	—	—	3
Total	71	32	12	10	3	2	1	23

The Panel Committee on Sugar recommended that factories below 250 tons crushing capacity should not be allowed to expand This involves half of the mills in Madras, all the mills in Orissa, 3 in Bombay States and a few mills in Bengal, Bihar and the U P The Panel Committee seems to prefer a capacity of 800 tons. Most of the mills in Bombay, Madras, and the Indian States are below this size Between the U P and Bihar, though the U P. has a greater percentage of biggest factories, the general size of mills is greater in Bihar In general, the size of factories is greater in Northern India than in Southern India. In other words it is greater for factories supplying distant markets than those which cater for local markets The industrialists are expanding the size of the factories, but the rate is slower for factories outside the U P and Bihar.

The main factors which have affected the size of the sugar factories are three :—

1. Quantity of cane available for milling.
2. Transport facilities
3. Access to markets

The smaller supply of cane is the cause of the small-size of factories in Madras, Bombay, East Punjab and Bengal So far as foreign producers are concerned, Indian sugar factories compare unfavourably both with regard to size and the cost of production.

Efficiency

The efficiency of the industry depends mainly on the following three factors —

1. The manufacturing cost
2. The utilization of by-products.
3. The raw material—its quality, duration of supply, and cost

Machinery

Between 1932 and 1946 India imported sugar machinery valued at Rs 12 crores It is difficult to import machinery now. We require machinery for replacing old ones as also for the new factories According to the Panel Committee most of the machinery can be manufactured locally and it is essential that this be organised properly without delay However, there is sufficient scope for economy in fuel if the boilers and the furnaces be properly remodelled. An improvement in the cane crushing machinery and a proper remodelling of the other machines is also possible. There is sufficient scope for progress in the chemical and the engineering sections of the factories.

Bagasse and Press mud

The main by products of the industry are bagasse, which is left over after removal of juice, press mud and molasses The bagasse is usually used as fuel in the factory itself As already mentioned there is scope for economy in respect of fuel burning The surplus bagasse has been found useful in the manufacture of insulated pres boards paper and strawboards as also for the produ ction of ravon and plastics S milarly the press mud can be utilized in producing fertilisers wax dues activated carbon and distemper But science and research have to be further mobili ed for better exploitation of the possi bility of their industrial uses

Molasses

On an average from 100 maunds of cane about 3 6 maunds of molasses are obtained To some extent it has been u ed in the manufacture of methylated spirit curing of tobacco burning as fuel as manure and for the produc tion of power alcohol The greater portion of it is thrown away as waste With proper scientific research it can be used for the production of stockfeed edible syrup surfac ing roads acetic acids chemical solvents etc But three uses of molasses are most important India lacks in petrol During World War II motor cars had to be run on coal gas It is possible to use molasses to produce alcohol which can be mixed with petrol in the ratio of 1 4. Thus the surplus of 4 5 lakh tons of molasses can yield about 22 million gallons of power alcohol The U P and Bihar Governments are promoting the production of power alcohol In the U P 5 million gallons of power alcohol are already being produced and construction work is near completion for another 2 million gallons

The second important use is in the form of manure for reclaiming usar land Dr N R Dhar of the Allahabad University has conclusively proved its utility for this purpose, but it has not received the earnest attention of the Government as yet

The third important suggestion could be that instead of producing white sugar, brown sugar and *gur* may be produced on the factory basis The production of *gur* should not result in the yield of molasses Besides, it will mean more recovery of sugar for human consumption In addition it may be noted that about 2½% of *gur* would be in the form of glucose, which is directly assimilated by the human system, but which is missing in white sugar. On the factory basis, 100 maunds of cane would yield 13 83 maunds of *gur* in place of about 10 maunds of white sugar.

Raw Material

The raw material, namely, sugarcane, is by far the most important factor which determines the efficiency of the sugar factories Although much has been done to improve the quality of cane, both with regard to the sugar content of the cane as well as the yield per acre, India is far behind countries like Java, Hawaii and Formosa. The cultivator is more attentive to the high yielding varieties rather than to the high sugar varieties. The reason is that the price fixed for cane by the Government is by weight and not by the sugar content. This is so because with thousands of small cultivator suppliers it is very difficult to test the sucrose content of every cart.

Zoning

If the industrialists co operate and take real interest in the welfare of the peasants, it should be possible to mark out zones for each factory and to make the quality of cane uniform in that zone. The price of cane may then be fixed with reference to the quality of the cane in that zone There may be different prices for the quality of cane in the different zones

Our aim should be to increase the yield of sugar (or *gur*) per acre of cane. In this connection we may benefit by the experience of Hawaii and Queensland. The former concentrated on greater yield per acre with cane of moderate sugar content, the latter, on varieties with sugar content The progress made by Hawaii was far greater than that by Queensland. So, and in view of the prevalent system of paying the price by weight, India should also go in for varieties which bring greater yield

The average yield of cane per acre in India is about 15 tons, and according to the estimates of Dr Burns it can be easily increased to 30 35 tons * Two important factors in this connection are irrigation facilities and manure supplies, which must be solved It is because these two problems have not been solved that though over 90% of the area is under improved varieties of cane, the yield per acre has not increased appreciably

The problem of variety is linked with the question of the duration of supplies and crushing If we want to make the best use of the crushing capacity of the factories, the supply of cane should not exceed the capacity, otherwise,

*In an experiment in Deccan as much as 100 tons of cane per acre have been produced

the excess supply of cane has to be stored and during storage the cane juice dries up rapidly, and there is deterioration of quality Hence it is necessary to grow early maturing and late maturing varieties Unfortunately, the early maturing varieties yield less cane per acre and the cultivators are therefore less eager to grow it In order to solve the problem the price for the early supplies should preferably be fixed higher than for the later varieties The later varieties suffer more from cane diseases So it is necessary to find popularize and distribute disease resistant varieties

Transport

Besides better transport facilities can enable supplies from more distant areas The percentage of cane received by road has increased from about 50% in 1934 35 to about 75% in 1945 46 The Panel Committee suggested that State aid be given to factories to lay tramway and use diesel lorries and trailers At the same time it may be suggested to the Government to develop roads In the presence of road facilities the factories are more likely to make their own transport arrangements

Research

Since 1944, the research work with regard to sugarcane has been taken over by the newly established Indian Central Sugarcane Committee In order to finance its work the Government of India gave Rs 1 25 crores in 1945 In 1934, in order to increase its income the Government of India had levied an excise tax on the sugar produced in India Out of the amount so collected every year, the Government now sets aside a sum at the rate of

four annas per hundredweight of sugar, *i e*, about Rs 50 lakhs yearly, for expenditure by the Indian Central Sugarcane Committee

The U P already had a college of sugar technology for training candidates. Now it has been taken over by the Central Sugarcane Research cum Technological Institute which has been established near Lucknow with a Central grant of Rs 50 lakhs, for both research and education This is due to the efforts of the Indian Central Sugarcane Committee which is now co ordinating the activities of the various sugarcane research stations all over India Besides, the Committee is financing approved development works in various provinces The emphasis of the Committee is on irrigation, manure, disease free seeds, suitable implements and the provision of sufficient watch and ward service for the protection of crops against pests and diseases It must be emphasized that it is also essential to organise demonstration farms in the cane areas It should be possible for the provincial cane development personnel and the cane development societies to rise to the occasion and organise such farms Such farms shall also be the centre for the production and distribution of better seeds

Profits

In spite of the manifold competitive drawbacks of the sugar industry, on account of the protection afforded to it by the Government of India, the industrialists have earned good profits throughout. It is, however, regrettable that they have not co operated to bring together fuller statistical data so as to analyse the efficiency at various stages They have ever stood for protection but seldom for better treatment to the labourers and the consumers.

Labour

So far as the labourers are concerned, the wages bill for unskilled workers, who are predominant in the industry and number about 1 2 lakhs, amounts to about Rs 90 lakhs, *i e*, about one-fiftieth of the total cost of production. The wages received by the workers have been undesirably low. In the U.P the Labour Enquiry Committee has recommended increased wages which work out at about Re 1 daily for unskilled workers and up to Rs 2 daily for skilled hands Besides they have recommended the grant of a bonus of 2 days' wages for every 1% dividend declared by a company Assuming a dividend of 12%, and that about three fourths of the workers earn between 8 to 12 annas daily, the increase in the cost of production on account of the recommendations should be only one per cent Even if the increase be met only from profits, the reduction in dividend rates should be two or three per cent

According to the survey made by the Rege Committee 63 86 5% of the workers are indebted on the average for 140 200 Rs mainly on account of marriages and domestic needs. In Meerut, Gorakhpur and Darbhanga 21 8%, 14 3% and 10 6% of the debt was incurred to purchase land and cattle.

About two thirds of the labour force changes year after year and only about ten percent can be said to be permanent Even so, the housing facilities are deplorable The Rege Committee made sample surveys at Meerut, Gorakh pur, Champaran, Darbhanga, Ahmednagar and Madras Most of the dwellings had one room each It was more true in the case of dwellings provided by the employers On the average there are more people per room in the private dwellings About three fourths of the occupants

he purchased it before World War II, he will be paying more through the doctor's bill The consumer ought to be taught the qualities of sugar, *gur* and *boora* Besides, at present the wholesale price of sugar in America is about eight annas a seer and in Cuba about six annas per seer. In India it is about 12 as per seer. The producer does not try to reduce the manufacturing cost and make a better use of the by products He pleads repeatedly for a reduction in the cost of cultivation of cane and, in its absence, asks for further protection It is high time that he should be told that unless he and others come together and try to solve the problem, the protection cannot be fully granted For about eighteen years the industry has been progressing under protection In the interest of the consumer, it now appears desirable to reduce the protective duty from 1949 That is the only way of ridding the Indian sugar industrialists of the protection crutches and securing a better deal for the consumers

Another suggestion that can be made is that the marketing of sugar should be improved Just as cement is centrally marketed, similarly let a central marketing agency be created for sugar, and its membership be made compulsory for all mills. Also, let consumers organise themselves into co operative stores

The producers have often argued that the prices which they have to pay for cane, labour, etc , are high enough and entail a loss unless they charge a high price There is a lot of inefficiency within the factories. The U P. Government had appointed an officer to investigate into

the efficiency of the mills and report what reforms can be made. It is not known what happened thereafter. But it seems that the manufacturers have gained more in price than the increase in the expenditure justifies This strengthens the argument for lowering the protection duty.

XIII

THE PAPER INDUSTRY

Before the war a quire of paper could be bought for six pice. Today it is not available easily even for four annas. This is because we have come to depend on mill-made paper. The production of mill made paper is dependent on supplies from different parts of our country and the supply of machinery and stores from abroad The hand made paper industry has declined and we have thus lost a good alternative source of supply There was a time when India was famous for its hand made paper When the Western mill made paper had not captured our Indian markets, the hand made paper was used throughout the country. Even now, where the former is not supplied, the latter is in use Our business men and traders still stick to the practice of using the hand made paper for their account books They, as also the Congress, are responsible for the present hand made paper industry in the country The popular ministries in the provinces should be more earnest and take a greater interest in the organization of rural industries for paper and other consumer goods on the co operative basis It was estimated that undivided India required 1·7 lakh tons of paper other than old and newsprint paper. The internal production is about 87 thousand tons only. A speedy organization

of the hand made paper industry can help to solve the problem to a substantial extent For its success it is also necessary to make a drive for the use of hand-made paper.

History

However, till the middle of the last century, our requirements of paper were satisfied partly by internal production and partly by imports from China Thereafter the British Government adopted a policy of encouraging the purchase of British made paper. When Sir Charles Wood was the Secretary of State for India, it was made a rule to import all paper required by the Government of India from Britain

In 1870, the first Indian paper mill was established on the banks of the Hoogly River. Not much headway was made by the industry till the Great War, though the Swadeshi Movement of 1906 did help the growth of paper production in India. On the eve of the Great War, there were eleven mills[1] producing about 29 thousand tons of paper. In 1918 the production had increased to 31 5 thousand tons, mainly because during the War it was difficult and more costly to import paper Two more

1 The statistics of the progress of the industry are as follows .—

Year	No of Mills	Production (000 s tons	Remarks
1870	1	—	Name—Balli Mills
1900	8	20 5	Distribution of mills Bengal 3 Bihar U P , Bombay, Gwalior,
1906	8	21 2	1 each other, 1
1914	11	28 7	Next year due to Swadeshi Movement it increased to 24 7 thousand tons Additional Mills· Bombay 2 , Travancore 1.

mills were established After the War, these mills could not withstand the foreign competition. As a result the production of paper in 1922 was only 23 290 tons, that is, less than what was produced even in 1914.

Grant of Protection

In 1924, the paper producers requested the Government of India for protection The matter was referred to a Tariff Board in 1925 Although the Government did not totally agree with the findings of the Tariff Board, under the *Bamboo Paper Industries Act*, an import (protective) duty at one anna per pound was levied on only printing and writing paper, up to 31st March, 1932. No protection was granted to wood pulp and paper made from it In 1931, however, another Tariff Board reported in this regard As a result, the protection was extended for another seven years, and an import (protective) duty of Rs 45 per ton was levied on wood pulp also After the report of a third Tariff Board in 1938 the import (protective) duty on paper was reduced by about four pies per pound, i.e , by about one third The import duty on wood pulp was also reduced similarly to Rs. 35 per ton or 25% of price, whichever was high In 1942, protection was extended till 31 3 1947. After the report of the fourth Tariff Board (1947) the protection was withdrawn

Progress During Protection

It is desirable to find to what extent the Indian paper industry made progress during the period of protection with regard to the protected and the unprotected varieties of paper. In this study we shall ignore the imports of

the old newspapers, also the newsprint paper required generally by the daily and weekly newspapers.[2]

By 1938 39, India was producing about 45 5% of the paper used We were producing 79 6%, *i e*, about four fifths of the protected variety and only 11 3% *i e*., about one tenth, of the unprotected variety, so far as our consumption of paper was concerned During World War II, we began to produce more quantity of both varieties In 1941-42, 98% of our consumption of the protected variety was produced in India. In 1944 45, 84 6% of the unprotected variety was also produced in India

2 The statistics for the production and imports of paper during the period of protection have been as given below in thousands of tons —

Years	Total				Protected paper			Unprotected paper		
	Production	Import	Consumption		Production	Import	(vi) 100 (vi) (vii)	Production	Import	(ix), 100 (ix) (x)
				% (ii) (vi) × 100						
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)
1924	25 7	109	134 7	19 1	23	20	53 5			
1931	40 7	115	155 7	26 1	36	11	76 7			
1937 38	54	87	141	38 3	48	15	76 2	6	72	7 7
1938 39	59 2	70 8	130	45 5	51 9	13 5	79 6	7 3	57 3	11 3
1941 42	93 5	12	105 5	89 9	63 6	1 3	98	29 9	10 4	74 2
1944 45	100	9	109	91 8	63 1	2 3	96 5	36 9	6 7	84 6
1945 46	97 4	26	123 4	78 1	58 9	14 3	80 5	28 6	12 2	70 1
1946 47										

During World War II the progress in regard to the unprotected variety has been greater than that in the case of the protected variety. The production of the protected variety increased from 52 thousand tons in 1938 39 to 63 6 thousand tons in 1941-42 and declined slightly to 63 1 thousand tons in 1944-45. In other words, between 1938 and 1945 the production of the protected variety increased by about 21%. On the other hand, the production of the unprotected variety increased from 7 3 thousand tons in 1938 39 to 29 9 thousand tons in 1941-42 and to 36 9 thousand tons in 1944 45. The increase during the period 1938 45 is about 406% This extremely rapid increase compared to the progress in regard to the protected variety has been due to the fact that in practice the import duty on the unprotected variety has been more than that on the protected variety.

Yet it is regrettable that our consumption of paper—other than newsprint and old paper—decreased since 1931. In that year it was about 156,000 tons In 1941 42 it was only about 106,000 tons.

However, during 1921 44 the number of mills had increased from 8 to 23 The production capacity of the mills increased from 33,600 tons in 1925 to 103 8 thousand tons in 1944, and in that year they had produced almost the same amount. Since then the production capacity[3] has decreased mainly on account of the number of working hours having been reduced from nine per day to eight. Successful attempt has been made by certain mills to manufacture kraft-paper, blotting paper and even bank-paper.

3 The installed capacity is now about 1 5 lakh tons of paper including boards

The import of wood pulp has also declined [4] During 1931 44 it decreased from 20,000 tons to only a few hundred tons During the last three years it has averaged about 6,000 tons The production of Indian pulp from bamboo, sabai grass, waste paper etc. increased from 18,000 in 1931 32 to 36,000 in 1936-37 and to about 127,000 tons in 1944-45 [5] During 1936 45 the production of the wood pulp (bamboo pulp) increased from 19,000 tons to 62,000 tons, while that of sabai grass pulp doubled Such waste materials as old ropes, cloth cuttings and rags had yielded 9,000 tons of pulp in 1936-37 and 27,000 tons in 1944-45

Size of the Firms

The best size of the firm depends on the cost of machinery, overhead charges and the distribution costs Twenty years back it was considered that a mill with four machines for converting the raw materials into paper would be of an optimum size In 1931, out of six big factories, three satisfied the condition, while the other three had two machines each In 1944, the position roughly was that one-third of the total number of factories had four machines, another one third had two to three machines and the rest had only one machine each Since the markets for paper are increasing rapidly, it may be said that even those with two or

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4

Year	1931	1936 37	1942 43	1944 45	1945-46
Import of wood pulp (000 s tons)	20	11	7	7 2	5 5
Percentage of import to total pulp used	53%	20%		5 4%	

5

Production of Indian pulp from (000 s tons)	Bamboo	Sabai grass	Waste pulps	Rags cuttings etc.
1936-37	19 3	11 5	5·9	8 8= 45 5
1944 45	62 3	20	17 4	27 3=127

three machines work economically. Therefore, it may be concluded that one-third of the Indian paper mills are under sized.

Localization of the Industry

The industry is slowly getting decentralised. In 1925 more than three fourths of the workers in the industry were employed in Bengal, about a seventh in the U P, a sixteenth in Bombay and the rest in Madras In 1937, Bengal claimed only two thirds of the workers, the U P had about an eighth, Bombay about a ninth. The industry had progressed in the Punjab also one twelfth of the workers were employed there The number of paper-workers in Madras had also doubled Since 1937, five new mills have been started and they are all situated outside Bengal, that is, one each in the U P, Bihar, Orissa, Mysore and Hyderabad (Deccan) [6]

What is the reason for this dispersal ? It lies in the various factors of localization The chief of these factors are raw materials and accessories, sufficient pure water, source of power, and market For a long time, the last three factors exerted a great pull The large market at Calcutta, the cheap supply of coal and the waters of the Hoogly attracted the industry to Bengal With the growth of literacy, the market for paper exists all over

6 *The location factor of the industry in 1939 was as follows* —

	Bengal	U P	Bihar	Bombay	Orissa	Mysore
(*a*) Percentage of population (1941)	15·0	14·1	9·4	5·4	2·2	1·9
(*b*) Percentage of workers in the industry (1939)	50·5	11·3	11·1	7·7	4·5	4·8
(*c*) Location factor (*b*)/(*a*)	3·2	0·8	1·2	1·4	2·0	2·5

the country, with the development of hydro electricity the sources of coal have a losing force In the past the raw material was mainly the sabai grass, which had to be secured from the Punjab, the U P. and Nepal. One or two mills—particularly the Couper Mills at Lucknow—used rags and waste paper. As a result of protection, there has now developed the production of wood (bamboo) pulp More rags and waste paper from the urban areas are being collected and used Consequently, the paper industry is getting decentralized On account of the greater possibility of the collection of waste paper and rags, there is scope for the establishment of paper mills near big cities This, as also the development of Rihand Dam for the supply of electricity, should make it possible to establish a paper mill at Allahabad and Banaras [7]

Future Planning

The average yearly imports of the different kinds of paper during 1925 30 and 1937 38 were as follows —

	Imports (Thousands of tons)	
	1925 30	1937 38
Writing paper	1	2
Letter paper	3	9
Packing paper	11	26
Printing paper	13	
Board	16	32
Newsprint	19	61
Old paper	36	49
Others	3	3
	102	182

7 In 1938 the Tariff Board pointed out that the best variety of bamboo was available in Tinnevelly (Madras) With the supply of cheap power, it should provide an ideal location for some mills

This indicates that greater attention should be paid to the production of boards, letter paper, newsprint and packing paper [8]

Besides, in spite of the progress that the industry has made it is still less than one per cent of the *per capita* consumption of paper in the U S A , Canada and England [9] With the spread of education and literacy, our demand for paper would increase many fold. The Panel Committee on paper, which was appointed by the Government of India, estimated that our requirements in 1951 and 1956 would be 280 and 422 thousand tons of *paper, respectively Besides we would require 60,000* tons of newsprint for our newspapers

Our production of paper *at present seems to be on* the decline This has been due to wear and tear of machinery during the war, and lack of supplies of new machineries, short supply of coal, lack of transport facilities for essential raw materials and the *so called* low

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8 The progress with regard to the kinds of paper produced in India is as *follows* —

Period	*New kinds of paper produced*
1930 31	White printing and writing paper
1931 38	Bank paper, blotting paper, wrapping paper and straw boards
1938 48	To let paper, Drawing paper, Packing paper, Kraft-paper Mill boards corrugated boards, Grey boards, Duplex Triplex, and Ticket boards

9 Yearly *per capita* consumption of paper (in lbs)

India	(1939)	1
Denmark		86
Norway		98
England	(1935)	152
Canada	(1937)	174 7
U S A	(1941)	300

controlled prices of paper [10] Our mills are less likely to produce more than 85,000 tons of papers and the imports may come to about 45 000 tons

In order to encourage production, the Government of India has raised the price of paper slightly, is allotting more coal and is offering more transport facilities for moving essential raw materials. The export of old rags and waste paper has also been prohibited The Government has even declared that it is not out to nationalize the consumer goods industry.

But this is not likely to solve our problem New mills cannot work before 1951 52 because the Western countries cannot supply necessary machinery before 1950 It would be preferable if the provincial Governments simultaneously encourage the production of hand made paper They should extend facilities regarding training, finance and organization of units (societies) for producing such paper

Meanwhile, it would be in the interest of the country if more attention be paid to the development of wood pulp But for transport facilities the Himalayan woods wait to be used In addition, research in raw materials

10 Recently, in a communication addressed to our Ministry of Transport the Secretary of the Indian Chambers of Commerce, Calcutta, said, *inter alia* that for every ton of paper they have to import 8 to 9 tons of raw material, coal, stores etc , and that the cost of production has gone up because of the following percentage increase in the prices of various materials and services —

	Increase per cent
Cost of Transport	200
Cost of raw material	300
Cost of coal	200
Wages	200
Stores (imported)	400

which is at present carried on at the Forest Research Institute, Dehra Dun, needs expansion and finance It is regrettable that the paper capitalists have shown little interest in this direction Though inferior to and less durable than the sabai grass pulp, the bamboo pulp serves our purpose Greater transport facilities and lower costs of the chemicals required in this case should greatly help the development of the Indian bamboo pulp industry

A reference has been made above to the newsprint paper We do not manufacture it. We import almost all that we require But the newsprint is generally not available for India adequately[11] and easily Besides, we are forced to pay exploiting prices In the circumstances, it would be very useful if the industry could be started by some private capitalists In case none comes forward, the State should undertake the production of newsprint. Although newsprint has been mostly manufactured from spruce and fir trees, it has been proved through research that good newsprint can be manufactured from other trees also We have a plentiful supply of these other trees in Central India and the industrialists should come forward to exploit them It is good that a company (Nepa Mills) is being established in the C P , for producing daily 100 tons of newsprint, ordinary writing paper and boards. The cost of production is estimated to compare favourably with the price of imported newsprint It is hoped that more *entrepreneurs* will also come forward

11 Although the number of newspapers have been on the increase, the import of newsprint has tended to decline —

3 Yearly Average Imports (000 s tons)

37 5	31 9	14 7	25 7

Labour

The number of labourers employed in the industry increased from 4,800 in 1925 to 7,037 in 1936-37 and to 17,629 in 1945. Their conditions of service cannot be said to be good. The Rege Committee, which submitted a report in March 1946, found that the basic daily wages of the labourers were very low. Four-fifths of them got less than fourteen annas.[12] Even if the war-time wages be taken into account, 54% *i.e.*, more than half of them had a net daily earning of less than one rupee.[13] Really the labourers would get more if they worked for hand-made paper industry.

The industry cannot be said to have a permanent labour force. The enquiries made by the Rege Committee in Bengal showed that only about one-fifth of the employees had ten years of service to their credit. About

12 Basic daily Wage (Annas) — Percentage who got this

Less than 6	11 1
6 8	17·9
8 10	15 0
10 12	25 0
12 14	12 4
14 & over	20 6
	102 0 (?)

13 Net daily earning (Annas) — Percentage who earned this

Less than 12	16
12 14	19 5
14-16	18 5
16 18	10 3
18 20	8·7
20 & over	27 0
	100 0

Compared to the basic wages, the increase in net earning is about 50% only and it is surprising that it is asserted to be 200% by some authorities (*vide* footnote 7 above).

two thirds (64 5%) had been employed for less than five years

The percentage distribution of the labourers as between the different provinces for the period 1925 37 was as follow :—

	Percentage Number of Workers			
	1925	1931	1935	1937
Bengal	77 6	73 7	72 5	64 2
U P	14 6	12 4	14 1	12 3
Bombay	6 0	11 0	12 2	11 8
Madras		2 1		1 6
Madras States	1 8	0 8	1 2	1 6
Punjab				8 5
	100 0	100 0	100 0	100 0

It is clear that though about two thirds have been employed in Bengal that province has been slowly losing in importance to other provinces It is not known from which province the labourers came and to what extent However since August 1946 the number of hours of work per day has been reduced from nine to eight

XIV

THE MATCH INDUSTRY

History

The Indian Match Industry hardly existed before the First World War Matches were manufactured by small capitalists on the cottage basis in the U P , Bombay, Madras and other places, but were mainly imported from Sweden and Japan since 1890 The Swedish Match Company was the chief supplier In 1915 16 we imported about 18 3 million gross valued at about a Rs 1 crore By 1921 22 the imports had fallen to 13 7 million gross though their value had risen to over Rs 2 crores

Before 1922 no successful commercial manufacture of matches took place in India The only factory worth mention was the Gujrat Islam Match Factory which was established at Ahmedabad in 1895 and which is still extant In 1922 a tax at Re 1 8 per gross was levied on imported matches Consequently, in 1923 some big factories were established Although manual labour and hand worked machines were still predominantly used in these factories, they could compete successfully with the foreigners With a view to helping the industry, a Tariff Board was asked in 1926 to consider whether any pro tective import might duty be levied on imported matches The Tariff Board did not consider any protective duty necessary Yet the Government of India converted the

existing import duty into a protective duty The Swedish Match Company was unable to compete with the Indian manufacturers and therefore it established the Western India Match Company—shortly known as WIMCO—which tried in vain to purchase the shares of the existing Indian companies The WIMCO demanded the co operation of the Indian producers under the threat of a rate war When these facts were placed before the Tariff Board, they only recommended that a watch be kept with regard to any exploitation of the Indian producers and consumers by the WIMCO. If the WIMCO was found to act against the interest of the country, the Government of India was to take necessary action against it Otherwise, the Tariff Board considered that WIMCO was rendering useful service by expanding the indigenous industry However, it advised that in order to satisfy the demands of Indian nationalism, the WIMCO should raise capital in India and also admit Indians to its Board of Directors

Production

The production of matches inside the country has increased tremendously. By 1939 the number of mills had increased to 113 employing 16,220 workers in India and Indian States The internal production was about 21 million gross and the imports totalled only 1 3 million gross By 1943-44 the imports further decreased to 0.28 lakh gross while the internal production in 1945 46 was reported to be 20 21 million gross During war-time the production was on the decrease. The number of factories has, however, increased to 150, though the number of workers was still estimated to be about 16 thousand The chief reasons for this

phenomenal progress are the cheap semi skilled labourers, simple machineries which can be well managed by the labourers and the cheap raw materials. One may even mention the huge internal demand

Location

The factories are spread in all provinces of India (except Orissa) and the Indian States of Bombay, Baroda, Hyderabad, Madras, Mysore, Travancore, Kashmir, Gwalior and Kotah The most important areas of production are Bombay, Assam, Madras, Bengal and the U P (Bareilly Cawnpore and Jhansi) The table below gives the first six areas in order of importance from three points of view

Position	No of Factories	Total No of workers	Workers per Factory
First	Madras (67)	Madras (3,349)	Assam (925)
Second	Bengal (9)	Bengal (2,574)	U P. (507)
Third	Bombay (4)	Bombay (1,740)	Bombay (435)
Fourth	C P (3)	U P (1,013)	Bengal (286)
Fifth	U P (2)	Assam (925)	Bihar (262)
Sixth	Assam (1)	Bihar (262)	C P (61)

The important deciding factors in the location of the match factories are the supply of wood, water and semi skilled labour. Cheap semi skilled labourers have been available in Madras and Bengal because of the existence of the small scale and cottage manufacture of matches in these areas. Bengal, the U P , the Punjab and Assam are using principally indigenous wood. The factories in Gujrat and Bombay States have also used Indian wood considerably. This is not true of other places, particularly Bombay. These places as also to a certain extent

Bengal have used wood which is mainly imported from Sweden where the Swedish Match Company has a monopoly in this field It is essential that future factories should not be allowed to be started at places where the supply of Indian woods would be difficult If wood has to be transported over a long distance, then in order to keep the wood from getting dried a large supply of water will be required Of late another factor which has accounted for the location of the match factories in the Indian States has been the absence of any excise duty on matches in the States[1] If in the new India, there comes to be established a uniform excise duty, then this factor will lose its importance.

Capital

It is not known how much capital is invested in the Match Industry. But 80 S> per cent of the internal supply is made by the Western Indian Match Company and the Assam Match Company, whose paid up capital amounts to Rs 168 lakhs The two companies were started by the Swedish Match Company of Sweden and have a progre sive and paying business During 1944 and 1945 the position was as shown below

Year	Value of business (In Rs crores)	Profits (In Rs lakhs)
1944	7 86	39
1945	9 01	50

At one time these two companies would not allow other concerns to enter the field and threatened a rate war. What is worse, the Swedish Match Company (Sweden), the Bryant and May Company (England) and

1. In 1943 about one third of the factories were in the Indian States.

the Diamond Match Company (U S A.) have together distributed the world market in match among themselves[2] They had even a monopoly in the production of potassium chlorate,[3] an essential ingredient for matches It is said that the three companies have kept back from the world the invention of the match stick which could be burnt a thousand times and produced for a mere five annas Only recently the U S Government revealed the monopoly and declared all agreements between the companies illegal so far as that country is concerned

Since the foreign companies in India have Indian capital, the Government may ask the companies to publish a list of their Indian shareholders and the number and values of shares held by them It is also worth consideration whether the Government can establish a system of government audit It is true that an excise duty is levied on matches and it has brought to the Government of India an income of about Rs 5 crores All the same, it is necessary to exercise control over those producers so that they may not use their dominant position to the detriment of rival producers or of the consumers

As regards the capital equipment in the match fac

2 In 1920 the Diamond Company had the sole agency to sell the Swiss matches in North America The rest of the world market was shared by the Swedish Company and the Bryant and May Later the Swedish Company came to have for its share the markets in the whole of India and Europe, 45 per cent of the British and a part of America Bryant and May got the rest of Britain and the British Commonwealth Lastly, the Diamond Match Factory supplied matches to the rest of America

3 Germany produced the chlorate and the United Chemical Products sold it in America. That is why on the outbreak of World War II America produced little of chlorate, which was so essential for the manufacture of ammunitions

tories, there are many in which the manufacture is carried on only partly with the help of the machine The manufacture of match can be completely mechanised but there are only a few up to date and highly mechanised factories in India In numerous factories there are no power saws and most of the other operations such as box making match filling, banderoling and labelling are done by hand

Labour

Of the 150 factories about a dozen employ about three fifths of the workers, *i e*, about 9,000 About half of these workers are employed by three factories in West Bengal and one in Bombay With regard to the rest of the factories, the size varies from a handful to over a thousand As a cottage industry, match making is known to provide work for hundreds of families only in two towns, *viz*, Sattur and Shivakashi near Madura (South India)

The WIMCO, the leading employers in the industry, recognise that the Indian match workers show alertness, skill and dexterity, whether making matchboxes with their own hands or working on simple machines or operating complicated machines. In well-organised plants the production per worker compares with the European standards. It is estimated that with their present skill 8,000 10,000 workers—instead of the present 16,000 workers—could produce enough to meet the Indian demand for matches, provided modern and efficient factories are established.

Although so efficient at one end we find the workers in highly mechanised concerns getting fair conditions of work at the other end, those who work in small sheds are totally exploited with long hours and low wages The hours of work are usually nine per day The highest wage rates are found in Bareilly, Bombay and Madras In Bareilly, about two thirds of the workers earn Rs 1 8 to Rs 2 and the rest between Re 1 and Rs 1 8 Almost all the workers in Mysore, the C P and part of Madras and half of those in Calcutta get less than twelve annas per day About one tenth of the workers are housed by the employers The figure is 15 per cent for Bareilly In centres like Calcutta and Bareilly, the rest of the workers live in dingy private tenements and pay very heavy rents Besides one may find a dispensary and a grain shop and occasionally a school and a canteen The welfare activities in the industry do not seem to go further No adequate provision has been made for safeguarding the future of the workers

Future

So far as the future is concerned the Government must allow the establishment of new factories only in those areas where an adequate supply of Indian wood is available The import of match wood has decreased but there is still scope for further research and facilities for the supply and use of the Indian woods

XV

THE GLASS INDUSTRY

Glass manufacture has been known in India since time immemorial, but the glass industry in the modern sense is hardly 60 years old It was in 1890 when the first glass bottle factory was started at Jhelum with the help of a German expert By 1914 a number of other glass factories had been established with the help of other experts, and half a crore of rupees had been lost by enterprisers in this industry India was then importing glass and glass products worth Rs 1 62 crores The Great War meant a reduction in the imports As a result, the old glass factories progressed rapidly and new ones were established Even so, in 1918 19 only blown wares were produced, and except in the case of glass bangles (*chooriyan*) the industry could supply only a part of the internal requirements The internal production was worth about Rs 40 lakhs and the imports valued at over Rs. 125 lakhs

In the inter war period there was simultaneously a much more rapid growth of the industries in some foreign countries The foreign competitors, particularly Japan, could capture our markets, except in the case of bangles The Firozabad bangles competed successfully with the Japanese and the Czechoslovak varieties The internal producers demanded protection from the Government of India against the foreign glass industries. In 1931 the

matter was referred to the Tariff Board, which not only recommended the grant of protection but also the establishment of a Government technological institution For technical reasons the proposals were not accepted by the Government

In foreign countries the State was fostering the development of the glass industry The industrialists were also applying scientific methods to the production processes In India the only attempt to give training in glass technology was made in 1908 when the Paisa Fund Glass Works Training Centre was established Yet the glass industry survived every ordeal and slowly progres ed By 1939 the production had increased to Rs 120 lakhs and the imports stood at Rs 102 lakhs

Glass sheets are produced at Bahjoi (U P) and two other centres in Bengal A completely automatic bottle making machine is in use. The Glass Technology Section of the U P Government also undertook a scheme for the training of persons to manufacture glass beads There is a glass technology department at the Banaras Hindu University, which imparts training on the same lines as the Sheffields University in England Even so before the war our glass industry sat sfied our requirements only to the extent indicated below

Bangles 6/7 , bottles and phials 2/5 glass sheets 1/8 lampware 4/5 , tableware 1/2 pressedware 2/5 , beads false pearls, scientific glassware, optical glass and glass shells, nil

During World War II the number of factories increased from 80 in 1939 to 174 in 1944. The production has doubled The number of workers in the regulated factories increased from 8,934 to 18,328 during 1939 44

The production capacity is 20 million square feet of glass sheet, 14 million pieces of glass shells and 135,000 tons of other glass products as compared to the production in 1937-38 o only 4 million square feet of glass sheets and 69,000 tons of glass products

Foreign Trade

Before the war, India had even built up a little export trade with the neighbouring countries, particularly Ceylon, Iran and Arabia Between 1929 and 1936 the annual exports decreased from Rs 1 04 lakh to 0 3 lakh By 1939, it was worth Rs 1 15 lakn, and it increased many fold during the Second World War We exported more to Burma, Ceylon, other British possessions and foreign countries Our exports now amount to about Rs. 6 lakhs

Our imports had fallen between 1929 and 1939 from Rs 2 5 crore to Rs 1 25 crore During the last war, it decreased to about Rs 0 15 lakh, because the supplies from Japan, Czechoslovakia and other countries were completely cut off. The imports have mostly included beads and false pearls, sheet and plate glass, optical and scientific glass, bottles and to a certain extent lampwares and tablewares

The Indian glass industry has progressed in spite of a number of obstacles, the chief among whom have been the following :

1. Unfair foreign competition and absence of tariff protection on an adequate scale.

2. Lack of proper and sound internal organization

3. Absence of technological institutions and slow progress in technical development.

4 Shortage of essential raw materials furnace bricks and transport facilities

Among the raw materials we mainly require sand, coal, lime, saltpetre and soda ash So far sand and coal are the two raw materials which have played a role in the location of the industry The best sands are found in the U P near Naini (Bargarh and Lohgarh) and Banda (Panhai) and these have been supplied even to factories in Bengal On the other hand, coal explains the location of factories in Bihar, Bengal and the C P Lime is found at many places and saltpetre is found in Bihar. Soda ash has not been manufactured in India until recently, although conditions in the country are suitable for its production.

Location

The industry has been mostly concentrated in the U P, Bombay, Bengal and Mysore, though it also exists in Bihar, the C P, the Punjab, Madras, Orissa, and Hyderabad During 1921 39 glass production declined particularly in the Punjab, Baroda and Kotah To mention a few districts, the industry declined in Etawah, Mainpuri, Allahabad, Jubbulpore, Bombay, Amritsar, Lahore, Baroda and Kotah This is due to bad location, though to a certain extent inefficient management is also the cause. The U P has the greatest share of the factories, workers and production. The centres employing more than 100 workers each in the U P are Agra, Firozabad, Aligarh, Mainpuri, Moradabad and Allahabad Besides sand, the location in the U P has also been due to supply of cheap and skilled labourers Glass production is a skilled process and we have skilled labourers for blowing, pressing, handling, construction of furnaces and even for working

the semi automatic machines More training facilities have also been available in the U P No wonder, that labour has been recruited from the U.P. for factories outside the province Sand and labour facilities outweigh the extra cost of getting coal from a long distance With the development of hydro electricity, the cost on account of coal should decline

The glass factories in India fall into five main classes, according as they produce (1) bangles, (2) sheet glass, (3) hollow wares, (4) bottles, and (5) fancy goods So far as bangles are concerned, the U P , and particularly Firozabad has practically a monopoly The *shishgars* of that place work on a contract basis and are unbeaten in skill, dexterity and designing even by the Japanese and the Czechs To a certain extent the bangle cottage industry also exists in Belgaum (Bombay) and in the Mysore State Sheet glass is produced at Bahjoi in the only glass factory of its kind in Asia and at two other places in Bengal The hollow wares and bottles are produced in the U P , Bengal, Bombay the C P , the Punjab, Madras As regards the fancy goods, particular mention may be made of the old centre in the district of Hathras (U P) where glass buttons, pendants, animal figures and a crude variety of beads are made. The glass industry can be developed in the South where raw materials exist

Size

The industry is organised both on small and large-scale bases The bangle industry is mainly carried on on the cottage basis though bangles are produced in factories also. In the U.P a number of large establishments produce the bangle spirals which are then joined in small

For others also, the numbers of hours of work is not fixed, except in regulated factories where an eight hour shift is observed But there are little arrangement to give relief from the heat—not even cool drinks except in Bangalore The workers faint at their post Medical facilities are also not uniformly provided Blowers are rather congested together with the result that burns are caused by molten glass at the end of swinging blow pipes Where women are employed no creches are provided Even in regulated factories, weekly holidays are not always given.

About one fourth of the workers are housed by the employers with or without rents Ill ventilated, one-room tenements are provided for the inferior employees, but the sanitary arrangements are inadequate everywhere and deplorable in some places

More training facility can be provided at the Central Glass and Ceramic Research Institute, Calcutta A few foreign experts should be secured Some Indians may be sent abroad for suitable training The Glass Technology Section of the U P. Government may be shifted from Kanpur to Firozabad to provide training facilities to the cottage workers The Glass Technology Department of the Banaras University also requires development

Technical Efficiency

The Indian factories are very ill equipped so far as the mechanisation of the production processes is concerned Only about one seventeenth of the factories have efficient and well designed furnaces. Another one twelfth have just good furnaces The rest six sevenths of the factories have defective furnaces. After production, the

glass goods are re strengthened in annealing chambers and not more than 1/25 of the factories have automatic continuous annealing lehrs The factories even require semi automatic blowing machines, and the Government must give facilities for importing these machines

For a rapid technical development of the industry, it is essential that our technicians be trained in particular arts of manufacture This is not easily possible unless our capitalists co operate with foreign firms so that their methods would be used in Indian factories Such agreements may be individually made by the capitalists, but they must take care that the agreement does not reduce them to be an appendage of the foreign interests. The direction and control of policy and the key executive posts must be in Indian hands, so that a factory may not serve the foreign interest at the cost of ours.

Future Planning

For future planning, a number of measures are essential Though some of them have been mentioned above, they may well be repeated here A detailed survey of the raw materials all over the country must be made. The production of soda ash should be undertaken. Favourable railway rates and facilities are necessary. More facilities for the training of the operators ought to be arranged. For training and research some foreign experts may be attached to the Central Glass and Ceramic Research Institute Capitalists may be given facilities for importing automatic and semi automatic machines. They may be encouraged to make production agreements with foreigners without subordinating the interests of the country. In order to bring about an improvement in the production processes, the quality of the goods should be

controlled by introducing a system of trade marks and specifications A central museum may also be maintained by the Research Institute to display the raw materials, finished goods, models of machineries, furnaces, etc , used in India and abroad It must also be found out for what purposes small scale production can be profitably carried Pilot plants may be established to determine the nature and type of new factories

However, the Panel Committee on Glass recommend ed that at first a five year plan should include an increase in the present production capacity of bangles by 10 per cent lampware 40 per cent, tableware 50 per cent, glass shells about 80 per cent, pressedware 100 per cent, sheet glass 110 per cent, beads and false pearls 2,500 per cent and plate-glass equal to the imports in 1937 38 In ad dition, the Committee recommended the production of optical glass and scientific glass apparatus

It is true that some more sheet glass plants are under construction and that orders for semi automatic machines and bottle making machines have been placed in England and America What is more important now is that the Government should so control the establishment of new factories that there may be a wider decentralised development of the industry

XVI

COTTAGE INDUSTRIES IN UNITED PROVINCES

The Indian National Congress as also the Government of India have recently decided to develop the cottage industries definitely The main reasons generally given are as follows —

(i) It leads to more employment, particularly in our country

(ii) It will mean provision of work in the widely distributed villages of India

(iii) It will enable us to utilize the local resources and plan for self sufficiency in the villages

Besides, there are the following reasons of recent origin —

(i) In order to reduce the prices and the scarcity of goods, we must immediately produce whatever we can and in any manner possible

(ii) Owing to the disturbed political situation in the world and the scarcity of foreign currency to pay for imported goods, it is not likely that we will *succeed in importing capital goods* Hence, large scale industrial development will be very slow for some time

(iii) Work must be immediately provided for lakhs of refugees who have come from Pakistan. This work can be provided best in cottage industries.

Therefore, the cottage industries must be developed in the U P also This development can be along two lines :

(i) The existing cottage industries may be improved and extended.

(ii) New cottage industries, for which the province is suitable, may be created and developed

In order to accomplish this task we must find out (i) what are the cottage industries existing in the different parts of the province, (ii) what is their position and (iii) what are their difficulties ? We must also find out what raw materials are found in the different parts of each tehsil and what cottage industries can be developed based on those raw materials In fact, a tehsil wise survey is highly desirable with regard to both the existing and possible industries It is also overdue

So far as the existing cottage industries are concerned, the Cottage Industries Sub-committee (U. P , 1946) has examined in general their position and difficulties It has suggested remedies too As regards new industries, no survey has been made as yet During World War II Mr L C Jain, the then Director of Industries, U P , had prepared a scheme for the industrial development of the province and had suggested certain new cottage industries.

Definition

Before we describe the main cottage industries of the province, we may distinguish cottage industries from the small scale industries. It is generally said that in a cottage industry only *a few* paid labourers work either in their own home or in a *Karkhana* and the total number *of all workers* does not exceed nine The number is not fixed at ten or more, because then the Factory Act can

be applied to a factory employing ten persons The distinction is not complete It would be better if instead of limiting the number of paid labourers to "a few", it was put at four [1] We must also say that cottage industries constitute the main source of livelihood at least during the period of their working [2] We can then say whether a production unit belongs to the category of the cottage industry or not An exception will, however, have to be made in the case of co operative industrial production societies, which should be classed under cottage industries if the working capital does not exceed Rs 5,000 [1]

It must be clearly borne in mind that it may be possible to produce a commodity on the large scale basis, small scale basis or cottage basis The distinction between the three classes is made only to separate the smaller production units from others [3] A list of the main cottage industries of the U P is given below and the important centres for each industry are noted against each name

I **Foodstuffs and Food-processing—**

(1) *Gur*—Meerut and Saharanpur.

(2) *Khandsari* Sugar—Bareilly, Pilibhit and Agra.

(3) Oil-crushing (*Ghani*)—Gorakhpur, Shahjahanpur, Meerut, Mathura and Kalpi

(4) Dairy and *Ghee*—Etawah, Mainpuri, Shikohabad, Agra, Khurja and Bulandshahr

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1 The suggested limit is arbitrary.

2 A question, which arises at this stage, is whether the period of working should be a minor part of the year or not and whether it can be a very minor part of the year

3 There is another distinction. Some industries have been classified by the Economic Programme Committee (A.I.C.C.) as home industries and these are carried on practically by the family members in their spare time I would add that the home industries are definitely subsidiary occupations

II Textiles—

(5) Handloom Weaving (Silk and Cotton)—Tonda, Gorakhpur, Meerut and Pilkhua.

(6) Printing of Cloth—Farrukhabad, Jahangirabad, Mathura, Tanda, Pilkhua (Meerut) and Lucknow.

(7) Hosiery—Meerut, Agra, and Farrukhabad.

(8) Blanket weaving and Woollen Goods—Muzaffarnagar, Meerut, lower Mirzapur, Badhoi, and Almora

(9) Tape, *Nawar* and Net—Meerut and Cawnpore.

(10) *Qalin* and *Durree*—Agra, Mirzapur, Shahjahanpur, Meerut, Khairabad (Sitapur), Badhoi, and Bareilly.

III. Leather and Leather Goods—

(11) Tanneries—Saharanpur, Meerut, Kanpur and Agra.

IV. Wood and Metal—

(12) Wood-carving and Carpentry—Nagina, Saharanpur, Amroha (Cholak and Katura) and Banaras.

(13) Furniture—Bareilly, Allahabad.

(14) Stick making—Mussoorie, Rishikesh, Dehra Dun and Gurukul Kangri (Hardwar).

(15) Brassware—Moradabad, Banaras, Farrukhabad, Hathras, Mirzapur Oel (Kheri), Ajodhya, Mallawan (Unao), Bindki, Bah and Baraut.

(16) Trunk making—Allahabad.

(17) Lock making—Aligarh.

(18) Cutting cissors and Razors—Meerut, Aligarh, Nagina, Najibabad, Bulandshahr (Amarpur).

(19) Hardware (iron)—Hathras, Najibabad, and Mirzapur.

(0) Motor body, tonga and cart making—Meerut and Allahabad.

V. Chemicals—

(21) Soap making—Meerut, Bareilly, Agra, Badshapur, Jaunpur, Lar Road and Allahabad

(22) Glass industry—Bijnor, Bulandshahr and Firozabad (also Agra, Aligarh and Moradabad for *Kachchi* phials).

(23) *Itars* and Oils—Jaunpur, Ghazipur, Ballia, and Sikandarpur.

(24) Scented oils—Kanauj, Ghazipur, Lucknow, Banaras, Bahraich, Allahabad and Aligarh (2 centres).

(25) Ayurvedic and Unani medicines—Meerut, Allahabad and Hardwar.

VI. Pottery—

(26) Pottery and toy making—Chunar, Khurja, Nizamabad, Agra, Lucknow and Bulandshahr.

VII. Cane, Bamboo and Fibre—

(27) Basket and cane furniture—Bareilly, Allahabad and Jhansi.

VIII. Forest Industries—

(28) Shellac—Mirzapur.

IX. Miscellaneous—

(29) Embroidery, Gold-thread and *Gota*-making—Agra and Banaras

(30) Paper making—Kalpi and Mathura.

(31) Biri making—Jaunpur, Allahabad, Moradabad, Jhansi, Meerut.

(32) Tobacco, Chewing and Smoking—Lucknow, Banaras and Jaunpur.

(33) Stone-carving—Agra and Mirzapur.

The other important cottage industries of the province are the following :

1. *Katha* (Lakhimpur, Gonda, Bahraich, Bareilly and Pilibhit).
2. Borax (Ramnagar).
3. Honey (Jhansi and eastern hilly districts).
4. *Tat Patties*, ropes and *Mundhas* (Eastern districts).
5. Saltpetre (Farrukhabad and Mathura.
6. Cane-making (Agra, Hathras, Khurja, Etawah, Shikohabad and Allahabad).
7. Glue (Cawnpore).

Foodstuffs

Turning to the position in these industries, 6% of the sugarcane is converted into *gur* while only 18% is converted into sugar. It is exported to all parts of the country. In order to benefit the cultivators it is necessary that the supply of crushers and pans be organised on the co-operative basis. Co-operative marketing of *gur* will also be beneficial. There should also be propaganda about the better nutritious quality of *gur*

The ghee industry is more important than the *gur* industry. About 20 lakh maunds of ghee are produced per year but there is the difficulty of transport as also the evil of adulteration. The slaughter of milch cattle during World War II has given a great a set-back to the industry.

The oil crushing industry which is found in every well sized village, faces two problems Improved *kohlu* (*ghani*) should be popularized through demonstration and their supply should be arranged on co operative basis Pure and edible oil should be sold in sealed containers through co operative societies

Textiles

Among the textile products, spinning is practised little in comparison to weaving For cotton textiles, handlooms are mostly used Before the war it provided employment for over five lakh persons who used about 52 million pounds of yarn and produced 50 crore yards of cloth every year The greatest problem is with regard to the supply of yarn and dyes The handloom weaver is completely at the mercy of the middleman It is high time that co operative societies were organized to save the weavers Over 500 persons are engaged in hand printing of curtains, bed sheets *lihafs* sarees and *fards* Mathura is noted for its Ramnami prints and Tanda for printing cloth for the Nepal market The annual production amounts to about Rs 1 5 crores

In the case of cotton textiles about one fifth of the yarn was imported, and for silk weaving most of the yarn was imported from Japan It gives employment to 1 4 lakh workers who use about 55 000 looms to produce 18 crore yards of cloth valued at Rs 3 5 crores annually Although it is considered possible to rear silk worms in the province nothing has been seriously done by the government in this regard Mubarakpur is known for its Shaltas and Banaras for its Kashi silk products

However, most of the yarn used for woollen products is handspun, though the process can be improved About

The U. P. is not famous for its leather goods, foot-wear, suit-cases and other travelling requisites, harness and saddlery. Very large quantities of foot-wear are exported to other provinces. Leather goods worth Rs. 8 crores are produced in the province every year. It means work for 1·5 lakh persons of whom 50,000 are at Agra, 27,000 at Lucknow and 20,000 at Kanpur The industry badly needs improvement in wasteful methods and joint working both for production and distribution. Co-operative principles can be utilized at once for distribution purposes.

Wood Work

Bareilly is known for every variety of furniture; Saharanpur and Nagina for carved articles. The World War II helped the wood industry tremendously. An idea can be got from the fact that the annual output at Bareilly increased from Rs. 3¼ lakhs pre-war to Rs. 20 lakhs during the war. At Saharanpur it has increased from Rs. 80,000 Rs. 1·5 lakhs. Carved woods and goods with brass inlay work from Saharanpur have found a ready market in Europe and America These include partition screens, tables, cigarette and cigar boxes, trays, big tables etc. The number of workers at Saharanpur is about 300 only and their earnings have gone up threefold. The closing of imports has given an impetus to the wooden toy-making also. It is mostly confined to Dehra Dun and Lucknow. It requires reorganization, cheap paints and designs. Mention may also be made of beds from Najibabad, Hapur and Tilhar and of lacquered legs of beds from Lucknow and Amroha.

Metal Work

Kanpur, Agra, Bareilly and Ghaziabad have many small workshops making agricultural tools and imple-

ments for sale to villagers. At Meerut about 100 dozen of scissors are produced daily. So too knives are produced at Hathras At both places there is a necessity for improved heat treatment Better knives would be produced if electric grinding machines and power punches are used The locks from Aligarh are famous for durability and security value, but the industry badly requires proper organization and guidance. This would improve and increase the output 20 30 times. During World War to II, while the contractors failed to supply more than 10,000 locks per month, an organization set up by the Industries Department produced 2,60,000 locks per month in 1943

Brass and copper wares up to the value of about Rs 3 crores are produced annually. Two thirds of this production is concentrated in Moradabad, Mirzapur and Farrukhabad. Ornamental brass wares of Moradabad and Banaras are produced by about 5 000 artisans and valued at Rs 30 lakhs Most of it is exported. Some villages are famous for the domestic utensils and they do considerable trade with markets all over India Moradabad is also famous for German silver and electroplated wares like tea sets, service sets, forks and spoons During the war the production of brass wire was organised on the cottage basis at Aligarh and Banaras Some gold thread making concerns are making insulated copper wire for electrical purposes

An important industry of Banaras is that of gold thread making which provides employment for 9,000 persons. Gold thread of the value of Rs, 70,000 are produced daily It weighs about 30,000 tolas One of the important difficulties is the non availability of cotton yarn of required fineness and quality.

Chemicals

Five hundred cottage concerns in the districts of Aligarh, Agra, Moradabad and Bijnor produce bottles, small phials for scents, *ganga jalies* and *Kachchi shishis*. Before the war the U.P. produced Re. 1 crore worth of glassware out of a total Indian production valued at Rs. 1·2 crores. Firozabad supplies 80% of our demand for *churies*. They have copied Japanese ond Czechoslovakian designs. They are using even liquid gold to produce decorated bangles. The problems before the industry are short supplies of fuel, kerosene and transport difficulties. In order to give relief to the bangle joiners, it is desirable to supply them with gas. At present they burn kerosene. There is a dearth of roller workers also and it is necessary that selected workers should be sent for training to Japan. Besides, the industry should be organised on a co-operative basis, otherwise there is danger of cut-throat competition in the near future.

Although about 1,00,000 maunds of soap were manufactured before the war, the industry suffered badly. There is a large scope for soap-making, much larger if villagers be made soap-minded.

Borax is imported into India from Tibet and refined at Ramnagar (Dist Naini Tal). Before the war this amounted only to 5,000 maunds, while about 25,000 tons were imported. The Indian borax could not compete with the foreign borax. Transport cost must be reduced to encourage the internal position.

Jaunpur, Ghazipur, Kanauj and Aligarh are famous for perfumes and oils, but the industry suffers from cut-throat competition, lack of scientific knowledge and adulteration.

There are many other chemical industries such as synthetic resins, plastics, pigments, starch, active carbons, disinfectants which can be produced inside the province. But the State must control the industry establish laboratories to which problems can be referred by the common business man, and grant better transport facilities

Ceramics

The U. P does not have any large ceramic industry. The Chunar pottery is really ordinary clay pottery and is mainly sold at the railway stations of Chunar, Moghalsarai, Banaras and Allahabad The Nizamabad pottery is very fragile and merely for show The Khurja pottery is better known as Delhi pottery It has improved during recent years During the war the Industries Department organised the potters of Khurja successfully.

Paper

A good opportunity to develop the hand made paper industry was lost during the last war The Industries Department has planned to establish training centres and a research institute, but in vain. An attempt to produce packing and writing paper was made during the war but it is not encouraging for peace time The stable peace time demand arises for wrapping gold and silver articles, sweets and condiments at Agra and also for making *Tazia*

Difficulties

Eight difficulties, common to all cottage industries, may be noted —

(i) Supply of adequate raw materials of good quality and at reasonable prices

(ii) Supply of finance

(iii) Technical improvements

(iv) Designs and standardisation.

(v) Difficulties in finishing.

(vi) Marketing and distribution

(vii) Taxation and transport

(viii) Supply of power

The cottage worker cannot stock materials He cannot compete with exporting agents who purchase oil seed, hides and skins in a lot His products are known to be better and more durable but he is losing this reputation because he does not get the right quality and quantity of yarn, steel, brass and other metal sheets and ingots The dealers from whom he gets his materials are not interested in his trade and cannot take a long period view of his business The dealers sell to him low quality goods by giving it fancy, popular and trade names and for high prices. In the case of handlooms, mills pass their rejected stuff for sale to the weavers High prices and low quality unduly lower the competing power of the cottage worker The solution lies partly in drastic legislation and partly in the organization of co operative supply societies

Another serious drawback is the lack of financial facilities. The worker's real asset is his labour and his personal credit The Mahajan who supplies finance does not attach much value to his credit Hence the rate of interest is unduly high and not infrequently the cottage worker has to promise to sell his finished products to the Mahajan at very low prices Better financial facilities would enable the worker to wait till he could get better prices The co-operative supply society can undertake this function also. Failing them, the Government should arrange for the provision of finance through an independent industrial finance organization Initially the State

may grant a lump sum, say Rs 5 crores, for developing the cottage industries

The cottage worker is conservative in adopting new methods and his industry suffers from lack of technical improvements The reason for his conservatism is his poverty He cannot afford new experiments The last war has shown that workers are willing to take to new methods and prepare articles according to the prescribed standard There is lack of technical education and demonstration There must also be a research institute for the purpose Government experts do not have a knowledge of all details They do not mix with the worker and talk in their language This attitude must go Also facilities must be provided for the adoption of the improved methods of appliances and technique

Apart from technical improvement the cottage product is not of the design and standard which are preferred by the consumer. This is because there is no organization which may educate the producers in new designs and how to make them The function could have been taken up by the dealers who purchase the cottage products or who supply the materials. Some Banaras dealers do extend such facility to their weavers Others, particularly in the brass ware industry of Moradabad, have copied the Western designs without caring about the shape and the size of the product as a result the quality of work has gone down This is wrong There is much in traditional oriental designs and we should not hasten to destroy them Partly the deterioration in design by the worker is due to the tendency to make it cheaper In the case of hand looms, it is due to the *Sahukar* who offers a lower price every time the product of the same design is offered to him

The cottage products do not have a good finish, which unfortunately has come to be valued by the public. A good finish requires that certain processes should be done correctly by machines or special appliances to assist the hand work. If the industry be localized, enterprising parties can combine to instal finishing appliances *e g* calendering plants at Tanda and Mau, leather finishing plants at Cawnpore and die punching and pressing plants at Aligarh The Government must organise the workers so that they may have this facility If industrial co operatives be formed on a commodity basis, the finishing operation can be undertaken by their federations

The markets for the cottage products are also limited In many cases the worker is under promise to sell it to the dealer at a low price In others the product is not known to the consumers Also the producer does not know where his product can be sold for a better price. Besides he does not have the transport facilities available to the large producers The solution lies in advertisement and propaganda by the Government The U P Government is maintaining Handicraft Emporiums at about half a dozen places. These should be increased Besides, the foreign markets should be studied and Indian cottage products published through the Indian Trade Commissioners.

The railways should be made to offer better facilities and lower rates to the small scale and cottage producer. Besides, the municipalities and district boards should be forced to revise their octroi and other local duties which raise the price and limit the competing power of the cottage producer. The Government of India levies certain import duties to protect the large scale producer In

doing so, they must take into account the effect of their action on the cottage industries.

Power

Ind a has a short supply of coal and oil and the cottage worker claims to have a fair share of these two sources of power India's future in general, and that of the cottage worker in particular, depends on the development and supply of hydro electricity for which we have ample resources Hydel power at 110 volts and 220 volts (and not 220 volts and 440 volts) should be supplied The rates charged for cottage industries should not exceed 9 pies per unit It is not quite correct to argue that village houses are not suitable for electric connection, or that electricity cannot be distributed in the rural areas

State Aid

It is e sential that a separate department be created in each province to look after the development of the cottage industries. This has already been done in the U.P. though it is not known to be making satisfactory progress. The Department must start to make an industrial survey of each district with a view to find out what cottage industries can be developed there It should also maintain a good library, a laboratory and a workshop under a Research and Education section which should arrange for continuous contact between technical institutes and workers The Department should also be responsible for publicity of cottage products.

Besides, cottage industries should be organised on the co-operative basis Thereafter it should be looked after by the Cottage Industries Department so far as the techni-

cal matters are concerned In the U P attention may be first paid to textiles leather and metal industries

There should be an Advisory Board to help the Director of the Cottage Industries.

The Provincial Government should provide a lump sum of at least Rs 5 crores to help the initial development of cottage industries Further monetary facilities should be secured from the Reserve Bank of India and the provincial co operative banks through the district and primary societies

The Government of India must demarcate the fields for large scale industries which compete with cottage industries so that the competition may change into complementary and supplementary production This is specially important in the case of textiles

XVII

TRADING BUSINESS

Bulk of the goods are produced these days in anticipation of demand or for 'market' Before these goods are actually placed in the hands of ultimate consumers, they change hands through several intermediaries and at all thesestages there is sale and purchase of goods This marketing or sale and purchase of goods form the subject matter of this chapter

Wholesale and Retail Trade

The term 'trade' refers to sale and purchase of goods and the persons engaged in this business are called traders Such business transactions may involve exchange of goods in huge or small quantities In case trade is carried on in large quantities of goods of almost a similar kind, it is called Wholesale trade, and where the business includes trade transactions of a petty nature, the trade is known as Retail trade The wholesale trade is generally done between the manufacturers or producers of goods and those who procure these goods from them in order to sell the same to retail sellers, who in turn sell the goods to consumers in small quantities. The latter are known as Retailers Thus Wholesale dealers or Wholesellers are a type of middlemen between the manufacturers and the retailers They are of great help to both the manufacturers as well as the retailers

Functions of Wholesellers

Wholesellers render great service in the trading business of a country. They themselves are neither producers nor retailers so as to benefit the consumers directly in any way, but *still they serve* as a connecting link between these two classes of business men and so prove of immense help to both of them

We shall now consider the services of wholesellers to manufacturers and to retailers, separately one by one

(1) **Wholesellers' services to Manufacturers** The manufacturers derive the following advantages of the *services rendered by wholesellers* (*i*) *They are relieved* of the botheration generally experienced in dealing with a very large number of purchasers scattered over distant areas in different parts of the same country or even all over the world (*ii*) The manufacturers get immediate and regular flow of money from a permanent and limited number of wholesellers (*iii*) The time, energy, and *money so saved can well and more profitably be employ*ed in improving the conditions of production (*iv*) The manufacturing business can be done ceaselessly without any interruption from the changes in the demand for goods in the retail or local markets so long as demand from wholesellers is guaranteed (*v*) The manufacturers can easily and rightly study the nature of public demand for their goods through wholesellers than if they were to deal with the public consumers directly or through their own agents

(2) **Wholesellers' services to Retailers** Like manufacturers, retailers too benefit by the services of wholesellers in the following respects (*i*) They can obtain supplies of goods within a *shorter period* and with financial

accommodation from wholesellers than if they were to deal with the *manufacturers directly*. All retailers cannot make a personal approach to manufacturers of all types of goods in which they deal. This is essential in business and the retailers can establish it easily with wholesellers. (ii) The retailers get varied and timely information regarding new varieties of goods from the wholesellers (iii) The retailers can make a better selection of goods to suit the requirements of their customers in co operation with wholesellers who are always ready to give any type of business advice sought from them by the retailers

Organisation of Wholesale Trade

It is sometimes argued that wholesellers are an unnecessary appendage in the trading business, because they simply add to the cost of goods without in any way improving their quality. This assertion is quite true, but in light of the above functions performed by the wholesellers, it is equally undesirable to eliminate them altogether. By virtue of their specialised functions they benefit producers, retailers, as well as the consumers. It is, therefore, necessary that their business be properly organised on most scientific lines and at the same time, wholesellers should attempt to effect as much economy in their business as *is considered absolutely necessary. From the* nature of business done by wholesellers, it is apparent that *they need not maintain big warehouses because they function* just like Post offices They obtain goods from the manufacturers and supply them to the retailers. They should, however, maintain an up to date and well illustrated Show Room attached to a Publicity Department solely responsible for scientific advertising and publicity campaign

among the general public. Buying and Selling Departments are to be manned by most efficient persons Selection of goods in respect of their quality and prices is a very responsible job and is to be handled only by those who have enough knowledge of public taste and purchasing power of the people Salesmen and commercial travellers should be really interested and capable in their job Otherwise, expenses incurred over them will merely add to expenses without any good return The Administrative Department including Finance must be strictly managed and supervised The Credit Section of this department should be kept most up to date in respect of credit-worthiness of all customers else it is through this section that unforeseen loss may be caused to the business at any time

Retail Trade

Retail trade make direct appeal to the consumers Unlike a wholeseller a retailer stocks various kinds of articles that are usually required by the people of that locality in which the shop is situated The site of the shop is generally a very busy thoroughfare He adopts all possible means to attract customers The transactions are mostly for cash in return for small quantities of goods Credit transactions are few and limited to known and old customers only Retail trade may be Specialised or General In the former case a trader restricts his business to one kind of goods only *e g* a cloth dealer a book seller or a grain dealer It frequently happens that such dealers congregate in a particular locality of the city which is known after the nature of commodity in which most of the traders deal, *e g* *Bazaza* (cloth market),

Sarafs (Bullion Market) or *Thatharaee* (Market for Utensils) General retail traders deal in a variety of articles of everyday use, *e g*, general merchants dealing in general merchandise or grocers dealing in assorted articles of everyday family use

Forms of Retail Business

Retail trade generally appears in any one of the following forms (1) Departmental Stores, (2) Multiple Shops, (3) Mail Order Business, (4) Consumers' Co operative Stores, (5) One price Shops, (6) Moving or Running Shops of Pedlars and Hawkers, (7) Hire Purchase System, (8) Ordinary Shop keeper, (9) Old ware Shops and (10) Auction sale System We shall describe these various forms one by one

Departmental Stores : As the name implies, under this type of business a number of departments are opened under the same roof and management Each department deals in one kind of commodity and appears like one specialised shop of that commodity There is a Departmental Manager for each department and above them all there is one General Manager who controls all the departments Such type of business requires heavy investment of capital as it caters for the supply of all conceivable articles needed in everyday life Such Departmental Stores are located only in big cities and their methods of dealing with the customers are refined, considerate and quite attractive Certain Stores provide extra facilities to the visitors in the forms of Rest Rooms and Refreshment Halls. Such stores attract large number of customers every day. They facilitate the shopping business of a busy purchaser who can conveniently purchase as many

things as he needs at the same place They attract customers by good display of their wares Frequently, scientifically organised Departmental Stores may also arrange for door to door delivery of goods to their customers The prices of goods in Departmental Stores are not necessarily high considering the quality of goods and the facilities provided to the purchasers by them They maintain a high degree of show and earn a good margin of profit by purchasing goods in bulk

Multiple Shops Under the system of Multiple Shops, a retailer opens a number of shops in different localities of the city or town They are all managed and owned by one common proprietor and supply practically the same variety of goods in all shops Thus they resemble branches of a big retail firm spread over the whole country or city Their main object is to reach the customers as closely as possible The prices of goods are almost the same in all shops They all get supply of goods from a central depot which also fixes the prices of goods The chief advantages of such a system of sale are that the firm gets the benefit of producing and selling goods on a large scale it maintains a uniformity in prices for all customers, and is able to establish direct contact with the purchasers Thus service seems to be the greatest consideration of a Multiple Shop system Usually Multiple Shops deal in standard goods of every day use and which have a ready den and at all places and at all times.

Mail Order Business In case of Mail Order Business, shopping is done through Post office The orders for the supply of goods are received through Post office and

One-Price Shops . These are small shops of assorted goods, which are all sold cheaply at one and the same price Though the range of articles is not very large, they attract crowds of customers every day Such shops flourish in days of business and industrial prosperity, when goods of various designs and uses can be obtained easily They are a common feature of big cities, where they are situated in very busy localities As the goods are often not of very high grade, One Price Shops cater primarily for the needs of middle class people Sometimes, such shops become a singular feature of *Melas* and Exhibitions

Moving or Running Shops of Pedlars Itinerant retailers carry goods either on their heads or in small carriage shops and sell them to consumers at their very doors. Such hawkers are quite well known in all cities as well as villages The stock of goods is very small Very often the prices offered by these sellers are cheaper than those of the fixed shop keepers This is so because the former have nothing to spend on establishment It is sometimes seen that fixed shop keepers employ some hawkers for selling goods to the public in different localities of a big city and pay them in proportion to the business given by them every day These sellers generally carry either a very limited variety or only one type of goods like cloth, general merchandise, utensils, vegetables, fruits etc

Hire-Purchase System Under this system, generally goods like furniture are dealt in The sellers hire out goods on the basis of monthly payment Crockery also sometimes is available on such terms but in that case charges are fixed in relation to the number of units of the

goods used each day. Frequently, goods are sold on hire-purchase system Under this system, a periodical payment for the goods is made by the purchaser for a predetermined time and if such payments are made regularly, after the expiry of such period of time, the oods become the property of the purchaser. This is a very convenient system of purchasing goods for those people who cannot afford to pay the cost of goods in one lump sum , they are thus enabled to make the payment by suitable instalments

Ordinary Retail Shops These are a common sight and well familiar to all of us They are like specialised shop keepers and establish fixed shops in the busy quarters of city, town or village They generally deal in only one kind of goods such as stationery, books, cloth, general merchandise, sweets, utensils, fruits, toys or other things.

Old-ware Shops In big cities are often found shops dealing in goods such as books, clothes, furniture and similar other articles that are used for some time and then condemned by rich or upper class families either in favour of new arrivals of such goods or when they become time-worn. These shops render great service to lower class people

Auctioneers : Goods are retailed by auctioneers on fixed days of the week, generally Sundays It is also noticed that in big cities auction sale is held daily in fixed shops. These systems are well known to us all and, therefore, need little further description

Home and Foreign Trade

We classified above the trading business on the basis of quantity of goods involved in each transaction. The

business can also be divided on a regional basis into (1) Home Trade and (2) Foreign Trade Home trade implies sale and purchase of goods between people residing within the same national border lines It is also called Inland Trade of a country Foreign Trade, on the other hand, is the trade carried on between peoples belonging to different countries Thus trade between people in India and those in France will constitute Foreign trade of India Home trade of a country is always much larger than its Foreign trade While home trade is generally free without any political restrictions and tends to develop with improvement in the means of communication and transport, foreign trade is very carefully regulated and controlled by the Government of the country Further improvement in the means of communication and transport to facilitate foreign trade is not an easy task Foreign trade also necessitate trade agreements between the countries desirous of such trade It requires facilities of Foreign Exchange and Marine Insurance Good ports are an essential condition for the development of the foreign trade of a country

For the proper development of a country, Home and Foreign trade are both essential The development of Home trade helps in the exchange of different kinds of goods between deficit and surplus areas within the country, while the same benefit is derived all over the world through Foreign trade between different countries This facilitates the fullest and best utilisation of natural resources and working abilities of all working classes

Foreign trade can be sub-divided into (a) Import trade, and (b) Export trade Import trade includes all those goods which are obtained from abroad and Export trade refers

to those goods which are sent to foreign countries Surplus of one over the other is known as Balance of Trade The Balance of Trade is said to be favourable when exports exceed imports, and when imports exceed exports, it is called unfavourable Balance of Trade The Balance of Trade is called favourable and unfavourable because in the former case, the country stands as creditor and in the latter case as debtor in relation to foreign countries

Re export or *Entreport* trade of a country consists of those goods which are received at the ports not for home consumption but for re export to other countries This happens when the steamers from the exporting country do not wish to proceed to the importing country for some reason and therefore, leave the goods at a port *en route* to their destinat on

XVIII

TRADING BUSINESS IN INDIA

The trading business of India was sufficiently developed even in the earliest days of her history. The recent excavations carried out at Brahamanpuri indicated that Kolhapur city and Maharashtra probably had commercial and cultural contacts with Rome over 2,000 years ago India was thus well known abroad for various types of articles Indian industries were in a flourishing condition and markets were accordingly wide The gradual socio economic and political upheaval di located the entire system and there set in a stage of general decline in every walk of life This has transformed the whole system of marketing and trading business in the coun'ry.

Organisation and Management of Trading Business

The trading business of India in its present form can be divided into (i) retail trade and (ii) wholesale trade, according to the volume of business involved, or into (i) Home trade and (ii) Foreign trade, according to territorial limits within which the traders reside The management and organisation in all these cases is not the same and, therefore, we shall study them separately

(i) Retail Trade Most of the trading business in India is now done on a retail basis It includes small shops, which are either owned by the propr etors of the business themselves or are taken on rent from house-owners In villages the shops generally belong to the

traders, while in cities, the shops are opened mostly in rented houses and are scattered all over the city. The concentration is greater in the busier localities than elsewhere In villages the shop and residence of a trader are generally combined but that is not so in cities Such shops are privately controlled and managed by a sole trader who invests his own money in the business He shoulders all the responsibilities and carries on his business single handed or employs a few assistants like sales men or book keepers and accountants These shops are of a specialised nature and deal in a particular type of goods only, such as shops of cloth dealers, utensil merchants stationery merchants book sellers and grain merchants In big cities, such shop keepers or retail traders also include partnership concerns or a few Joint Stock companies of limited liability There is no particular law defining the nature and hours of work in such retail shops nor there is any organisation worth the name for the unification or association of such firms on a national basis Recently in the U P the Shop and Commercial Establishments Act of 1947 was passed It applies to all shops and commercial establishments including in certain respects even those sellers who have no shops such as *Khonchawalas* pedlars and hawkers This Act makes provision for the regulation of hours of work and also some conditions of service like those relating to deductions from pay and leave rules for the employees In addition to such shops retail business is also transacted at fairs exhibitions or markets *Hats Bazars Panths* or *Shandies* are held in the villages on fixed days of the week when a large number of persons from villages far and near, gather together

to effect transactions. In big cities such casual markets are not altogether absent, though they are held only in one or two localities or *Mohallas* on fixed days In the countryside, *melas* are organised on occasions of social or religious importance They are managed either by local *Panchayats*, district authorities, or District Boards The number of *hats* is the largest in Bengal, which is followed by the United Provinces, Bihar and the Central Provinces and Berar

Retail business through Departmental Stores is almost negligible Such Stores are few and limited to big cities like Bombay and Calcutta only Recently one Departmental Stores has been established at Lucknow in the U P also The need for such Stores in big centres is immense but their unpopularity is due probably to la of bold initiative and enterprise Multiple Shop business too, is not very popular The only concern carrying on its business under this system is the *Batas* They are dealers in shoes and other allied goods though they also stock toys etc Business under Mail Order is limited to medicines, books, periodicals and some light goods in general merchandise In this respect it may be remarked that more business can be secured by guaranteeing that in no way inferior quality of goods different from that advertised in newspapers or letters will be supplie Consumers' Co operative Stores movement is of recent origin It is not even as the co operative movement itself Voluntary efforts with a spirit of mutual help, and service motive, alone can advance the progress of Consumers' Co operative Stores, which have bright future and great possibilities in a country like India

(ii) **Wholesale trade** The whole-sale business of India is not as extensive as her retail trade and most of the wholesale shops or dealers are centred at the district headquarters or subdivisional centres of a district The business is done chiefly by *Dalals*, *Arhatiyas* or brokers. In the rural areas, such markets are controlled by the local *panchayat*, District Board or a Zamindar. In cities, the right of management and control is exercised by Municipal Boards over such market centres The scope of such wholesale markets is largely dependent upon the facilities provided in respect of transport, finance and storage of goods The markets are wider in places where such facilities are easily available and they draw customers even from distant villages. These *Mandies* or markets are scattered over the whole country and have at present no systematic organisation or Association The terms and conditions of business are determined by custom in the absence of statutory legislation Specialised *Mandies* have formed Panchayats, which meet occasionally to discuss matters relating to their organisation and management. *Mandies* are a special feature of Northern India and regulated markets exist in Bombay, Central Provinces and Berar These markets are regulated under the provisions of the Markets Acts and relate mainly to cotton business

Mandies in the U P The United Provinces of Agra and Oudh have the largest number of *Mandies* or wholesale markets in India. The districts of Bareilly, Rae Bareli, Gorakhpur, Ballia, Hardoi and Budaun are comparatively more important for having a larger number of *Mandies* than other districts Cawnpore, Partabgarh, Naini Tal, Allahabad, Etah, Sitapur, Mathura, Aligarh, Jhansi,

Meerut, Fatehpur, Bijnore and Barabanki come next in order of importance These districts have *Mandies* for commodities which are their main products Thus the assembling markets (where the produce is assembled from the producers for final disposal) for wheat are located at Hapur, Chandausi, Muzaffarnagar, Meerut, Ghaziabad, Sitapur, Bahraich, Hathras and Cawnpore, for rice the chief centres are Saharanpur, Bareilly, Pilibhit, Gorakhpur, Basti and Dehra Dun, for linseed, the centres are Allahabad, Ghazipur, Basti, Jhansi, Jalaun, Gonda and Gorakhpur, for potatoes, the centres are Farrukhabad, Haldwani, Dehra Dun, Meerut, Lucknow and Kanpur, for *Gur*, Muzaffarnagar, Meerut, Bareilly, Lakhimpur, Barabanki and Pilibhit, for eggs, Bulandshahr, Gorakhpur and Saharanpur, for tobacco, Farrukabad, Banaras, Budaun, Meerut, Biswan, Mainpuri and Lucknow, for hides and skins, the chief centres are Meerut, Agra, Bareilly, Kanpur, Lucknow and Banaras

The business practices, weights, terms and conditions of sale and financing of facilities are not similar in all these *mandies but are known for their* great divergence. Wholesale markets for manufactured articles exist only in big industrial centres like Kanpur, Agra and Meerut *etc*

Home and Foreign Trade The home trade of India consists of wholesale and retail trade, as described above, for meeting the requirements of the people in the country Besides, the home trade of India also relates to the assembling of goods, chiefly raw commodities, for their export to foreign countries. In the assembling of goods a number of intermediaries like village *Banias* or *Beoparies*,

Zamindars, co operative Societies, *Arhiyas* or commission Agents and other Trade Associations actively take part These intermediaries are frequently also the financiers of their business, though in some case financial assistance is provided by indigenous bankers and commercial banks

The foreign trade of India consists of Imports and Exports of goods Her imports include mostly manufac tured goods, machinery and other luxury goods, while exports include raw materials like cotton jute grain, leather hides and skins and metals and ores The trade relations of India extend to the United Kingdom Burma, United States of America, Japan Australia and Canada

The foreign trade of India is very carefully controlled and supervised by the government It also depends upon the Trade Agreements between India and other countries The foreign trade relations of the country have gardually increased during the recent past with the development in the means of communication and transport Various intermediaries like trade Associations, Mercantile Agents, Chambers of Commerce and Importing and Exporting Houses share in our foreign trade The financial facili ties are provided by Foreign Exchange Banks or by Commercial Banks

For long, India enjoyed a favourable balance of trade but an adverse balance of payment Our exports of mer chandise were more than imports of merchandise, but because we had to pay tremendously on account of interest on loans, services rendered by foreigners and on other account, which were better known as Home Charges, the tables were generally turned against us Now after the World War II our country is constantly experiencing an

unfavourable balance of trade as also difficulty in meeting the balance of payments.

While in other countries the output increased after the War, we have a production crisis both in agriculture and in industry. Machinery and capital equipment are worn out and there have been successive crop failures The political partition of the Punjab has made the situation worse. At a time when we should have benefitted by exporting more to the European countries, our exports show a decline Our exports to the Asian countries have also decreased to about half compared to the pre-War period. On account of war damage in the Eastern Asian countries, our imports of rice from Burma and Thailand were reduced with the result that we are forced to purchase cereals from the western countries at very high prices Due to a slow rate of recovery of the European countries we have had to look to U K and U S A. for consumers' goods and capital equipment Because of their fantastic prices we had to curtail our purchases and shelve our plans indefinitely Our foreign trade business continues to be a headache for us

In 1949 we have copied United Kingdom and together with about three dozen other countries have reduced the price of our rupee in terms of the dollar This does not appear to benefit us much We have a greater unfavourable balance of payment position and adverse trade relations with the countries which have likewise reduced the value of their currencies We have to export more to these countries

There are international institutions like the United Nations Organisation, the International Trade Organisa-

tion, the International Monetary Fund and the International Bank Their efforts are directed to strengthen the economies between nations and to remove the restrictions in the way of a steadily growing volume of world income and to the utilization of the world resources But these organisations have achieved little and their efforts are thwarted by the political power game of the stronger nations

In this gloomy situation we can progress if we take the vow to live within our means, to use Swadeshi goods and to work with sincerity and zeal while we work.